NAVAL SEA SYSTEMS COMMAND

JOINT FLEET MAINTENANCE MANUAL (JFMM)

VOLUME VII

CHAPTER 4

CONTRACT SPECIFICATION DEVELOPMENT

APPENDIX E

PROCEDURES FOR THE PREPARATION

AND USE OF

WORK ITEM SPECIFICATIONS FOR SHIP REPAIR

TABLE OF CONTENTS

SECTION I

PURPOSE

A. The purpose of this document is to publish mandatory procedures for the preparation, utilization, and invocation of Work Items as directed by NAVSEAINST 9070.1 (Series) for repair and alteration of U.S. Navy ships and craft. This Appendix may be revised periodically at meetings of the Standard Specification for Ship Repair and Alteration Committee (SSRAC) to reflect changes in policy and procedure adopted by the Committee. Revised editions of this Appendix will be available on the SSRAC web site at http://www.navsea.navy.mil/Home/RMC/CNRMC/OurPrograms/SSRAC.aspx

SECTION II

DEFINITIONS

A. Work Item (4E Spec) - An individual set of work requirements written in a standard format to accomplish a specific alteration or repair.

B. Specification (Schedule) - The set of Work Items contained in a Job Order for repair and alteration of vessels.

C. Specification Package - The Work Items, reference data, and all contractual requirements.

D. Standard Items - Mandatory and non-deviational.

1. Standard Items (SIs) - Items that establish uniform methods and standards for routine requirements normally invoked in ship repair Work Items. These items are invoked whenever applicable without modification. SIs are approved and maintained by the SSRAC.

NOTE: THE ADDITION OF INSPECTIONS OR TESTS TO NAVSEA STANDARD ITEMS THAT WILL GLOBALLY AFFECT THE NAVSEA STANDARD ITEMS ARE NOT AUTHORIZED WITHOUT WRITTEN APPROVAL FROM THE SSRAC DIRECTOR. THESE CHANGES MUST BE SUBMITTED IN ACCORDANCE WITH THE SSRAC PROCESS FOR FINAL ADJUDICATION AND IMPLEMENTATION INTO FUTURE NAVSEA STANDARD ITEMS.

a. Requests for deviations from Standard Items must be submitted in writing and routed to the SSRAC Director for adjudication and approval. A separate deviation request must be submitted for each availability and must fully explain the reason(s) for the deviation (i.e., why deviation is required, how planning would be affected, how availability would be impacted, etc). The RMC retains the authority to make changes to work items in a non-precedent setting situation. This does not include requests for deviation to technical requirements which may require a Departure From Specification (DFS). For instances when a DFS is required, the requirements of the Joint Fleet Maintenance Manual (JFMM) must be followed.

b. Completed Standard Item Deviation Request Forms are to be submitted through the local RMC. Local standards coordinator will forward Deviation request form with RMC recommendation to ssrac@navy.mil for adjudication.

Standard Item Deviation Request Forms can be found at;
https://www.navsea.navy.mil/Home/RMC/CNRMC/Our-Programs/SSRAC/

2. Local Standard Items (LSIs) - Items that meet the criteria of SIs but are approved by the Naval Supervisory Authority (NSA) on a case basis for local or port specific requirements such as local environmental requirements or heavy weather plans. LSIs must not be used in coast-

wide bidding or extended solicitations. LSIs are numbered sequentially in the 099-XX series (i.e., 099-XXSE for a Southeast RMC LSI).

E. Templates - Work Items that can be modified and used for single or multiple ship classes.

NOTE: THE ADDITION OF INSPECTIONS OR TESTS (CHECKPOINTS) TO MASTER SPECIFICATION CATALOG TEMPLATES (E.G., MSWT, CSWT, SWT) THAT WILL GLOBALLY AFFECT THE TEMPLATES ARE NOT AUTHORIZED WITHOUT WRITTEN APPROVAL FROM THE SSRAC DIRECTOR. THESE CHANGES MUST BE SUBMITTED IN ACCORDANCE WITH THE MSC PROCESS FOR FINAL ADJUDICATION AND IMPLEMENTATION INTO FUTURE TEMPLATES.

1. Standard Work Templates (SWTs) - Work templates that are prepared for specific repairs, alterations, or to provide support for work frequently occurring in ship repair utilized across ship classes.

a. User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section VII-B.

b. User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.

2. Class Standard Work Templates (CSWTs) - Work templates that are prepared for specific repairs, alterations, or to provide support for work frequently occurring in ship repair utilized on a specific class of ship.

a. User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section VII-B.

b. User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.

3. Local Work Templates (LWTs) - Work templates that are prepared to provide instruction or support for work frequently occurring in ship repair that is unique to a specific geographic location.

a. User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section VII-B.

b. User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.

4. Basic Work Shell Templates (BWSTs)-When no applicable template(s) (MSWT, CSWT, SWT or LWT) is applicable, develop a BWST in accordance with the requirements of Section VII.

5. Master Specification Work Templates (MSWT) – Work templates that are prepared to ensure full completion of specific Mandatory Technical Requirements (MTRs) within the Class Maintenance Plan (CMP) utilized on a specific class of ship.

a. User activity must not delete Mandatory Technical Requirement(s) paragraphs or associated references as documented, nor must “Intentionally Left Blank” be used in place of reference(s) or requirement(s) as shown in Section VII-B.

b. User activity must fill in all blanks supporting Mandatory Technical Requirement(s), they must not use “Intentionally Left Blank” as shown in Section VII-B.

c. User activity can edit non-MTR related paragraphs to suit authorized work."

F. The Master Specification Catalog Maintenance Office (MSCMO) is responsible for approving and maintaining MSWTs, CSWTs and SWTs. LWTs are approved and maintained at the local level.

1. MSWT paragraphs supporting MTRs are mandatory as written, user activities will only fill in blanks within paragraphs that support MTRs. This ensures full completion of MTRs. MSWTs do provide limited discretion for the editing of non-MTR paragraphs.

2. The use of the applicable 998 series CSWTs or SWT in preparation of Hazardous Waste Work Items is mandatory. User activity must fill in applicable blanks only.

3. The use of the applicable 123 series and 992 series CSWTs or SWT in preparation of Cleaning and Pumping Work Items is mandatory.

3.a User activity may add/delete requirements or may use "Intentionally Left Blank" for non-applicable reference(s) or requirement(s) as shown in Section VII-B.

3.b User activity must fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.

G. Material - To standardize how Material Items are documented within Work Item Specifications, the categorization of Material as Raw Material, Repair Parts or Common Shelf Items are defined as follows:

1. Raw Material - Material which will undergo extensive shop work including significant joining, cutting, forming, or machining processes prior to use onboard the ship (e.g. plate, beams, bars, piping, casting components, etc.); regardless if this material is CFM or GFM (LLTM, Push, or Kitted) – Standard Phraseology B30 must not be used for listing Raw Material items.

2. Repair Parts - Material which will be installed as is, generally requiring only operational adjustment or calibration to meet the intended use (e.g. Pump Impellers, Close Coupled Pump and Motor Assemblies, Valves, Remote Operator Deck Gear Box Assemblies,

Electrical Controllers, Heat Exchangers, Bearings, Packing, Seals, etc.); if this material is CFM–Standard Phraseology B30 must be used for listing Repair Parts. GFM (LLTM, Push, or Kitted) will be listed in paragraph 5 of the work item.

3. Common Shelf Items - Materials that are general use consumables (e.g. fasteners, gaskets, cotter pins, O-Rings, seals, etc.) - Standard Phraseology B30 must not be used for listing Common Shelf Items.

H. Government Furnished Material (GFM): Major items of material which can only be procured by the government (e.g. Controlled Material, Ship Alteration material procured by a Program Office, or Refurbishment Program Material) or items that are difficult for a contractor to obtain in a timely manner based upon the contract award date to support production work; categories of GFM are defined as follows:

1. Long Lead Time Material (LLTM): Material for which the Planning Activity's Cost and Availability (C&A) analysis has determined After Receipt of Order (ARO) which is greater than the time period from planned award to start of availability; or material held by the Government which will be turned over for use during an availability.

2. Push: Alteration material provided by a Government program.

3. Kitted: Alteration material supplied by an outside activity (normally a Ship Class Planning Yard)."

Note: Additional information can be found in Section VII, paragraph 6.

I. Reference Tier documents are defined in NAVSEA Standard Item 009-04 Notes.

J. Front Loads and Level of Effort (LOE) Growth Reservations are used to accomplish anticipated repairs which could not be clearly defined while evaluating and planning Work Items in advance of a ship's availability.

1. Front Loads direct a contractor to accomplish a defined quantity of a specific task (i.e., replace 100 sq ft of hull plating, vee-out and weld 10 linear inches of deteriorated welds) to address conditions found during execution.

2. Level of Effort (LOE) Growth Reservations provide a number of man-days and material dollars to address conditions found during execution.

SECTION III

PROGRAM OBJECTIVES

A. In order to reduce the Total Ownership Costs (TOC) of preparing specifications, while maintaining quality standards and enabling execution savings through standardization, a program is necessary that will:

1. Make specification preparation less time consuming and aid the planner or surveyor in Work Item preparation.

2. Form the basis for a uniform training program for new personnel.

3. Improve the overall quality of Work Items to enhance understanding of requirements and to reduce the cost of work.

4. Present a uniform policy for ship repair nationwide.

5. Provide definite Quality Assurance (QA) requirements to ensure quality and reduce the surveillance burden of inspection personnel.

6. Allow temporary detail of personnel to another activity in peak workload periods without significant retraining.

7. Provide the necessary degree of standardization required to input and retrieve data via automated data processing centers.

B. NAVSEA directed that a committee of key personnel from the various user activities be formed to establish standardization policy and to prepare procedures for specification preparation, and to develop high quality Work Items for certain recurring repairs. This committee, Standard Specification for Ship Repair and Alteration Committee (SSRAC), was established by NAVSEAINST 9070.1 (Series). These standardized items and Work Items:

1. Are technically correct, contractually enforceable, and of sufficient scope to be of use at various activities for a broad range of requirements.

2. Are as self-contained as feasible to allow invocation at each activity without reference to numerous additional documents.

3. Avoid the use of instructions, work practices, or terminology not common to all activities.

4. Use the same format and phraseology.

C. Each activity must aggressively pursue this mandatory program and must routinely provide suggested revisions and modifications to the SSRAC where use has proven these changes necessary or advisable. SSRAC meetings are scheduled annually. Agenda items to be considered by the SSRAC must be proposed by interested activities 4 months prior to the scheduled meeting. The nominating activity must forward proposed changes/additions to the SSRAC for consideration 60 days prior to the scheduled meeting utilizing the proposal form provided by the SSRAC.

D. SSRAC products are available for viewing or downloading on the Worldwide Web at http://www.navsea.navy.mil/Home/RMC/CNRMC/OurPrograms/SSRAC.aspx

SECTION IV

STANDARDIZED ITEMS AND WORK ITEMS

A. The specification standardization concept is used to promote a program to promulgate and utilize the best procedures to be employed in developing Work Items as defined below:

1. Standard Items (SIs) are items that establish uniform methods and standards for routine requirements normally invoked in ship repair Work Items. These items are invoked whenever applicable without modification.

a. There are 2 categories of SIs from the standpoint of utilization. A Category I SI, when invoked, is applicable to the entire Job Order without further reference in the individual Work Item. A Category II SI, when applicable, must be invoked in each Work Item.

(1) A Standard Item may be assigned as Category I by the SSRAC if its requirements are either (a) safety (personnel or equipment) or environmental related, (b) administrative or managerial (non-trade) in nature, or (c) readily discernible, by shipcheck or listed references, based on the scope of repairs specified in a Work Item. A SI may be assigned as Category I by the SSRAC if it is applicable to only a unique class of ship or location of work and it meets the safety or administrative criteria above. Category I Standard Items must stand alone and require no utilization guidance or phraseology. The official source for Standard Items is the SSRAC web site at
http://www.navsea.navy.mil/Home/RMC/CNRMC/OurPrograms/SSRAC.aspx

2. Local Standard Items (LSIs) are items that meet the criteria of SIs but are approved on a case basis for local area use only. LSIs must not be used in coast-wide bidding or extended solicitations. LSIs are numbered sequentially in the 099-XXXX series (i.e., 099-XXSE for a Southeast Regional Maintenance Center LSI). Approval of LSIs will be made at the local level.

B. Changes or additions to SIs are identified by showing added or changed verbiage in bold Italics. Deletions to SIs are identified by a vertical line in the right-hand margin beside the deletion. New or completely revised SIs are identified by a vertical line in the right-hand margin beside the ITEM NO, DATE, and CATEGORY lines, e.g.:

ITEM NO: 009-01_____ |
DATE: 01 AUG 2008 |
CATEGORY: I_____ |

C. SIs and invoking phraseology (Section A of Annex B) developed at the SSRAC meeting must be invoked in all new procurements issued after receipt from the SSRAC Chairman, provided that the receipt of the SIs supports the planning timetable for use. Via STANDARD SPECIFICATION FOR SHIP REPAIR AND ALTERATION COMMITTEE (SSRAC) instruction NAVSEAINST 9070.1E CNRMC.

D. Newly developed or revised Standard Phraseology (Sections B-G of Annex B) must be utilized upon receipt.

E. Annex A contains an invoking guide for Category I Standard Items. This Annex must be updated after each SSRAC meeting and must be published with the results of the meeting and copies of the Standard Items and new or revised Standard Work Templates.

F. Annex B is a comprehensive listing of approved NAVSEA Standard Phraseology and is provided with notes and usage guidance for preparation of Work Items where a standard phrase is appropriate to describe the work requirement. Additions, deletions, or modifications to Annex B will be made by the SSRAC and a new Annex B will be published after each SSRAC meeting. Other changes deemed necessary by the SSRAC Chairman will be promulgated by correspondence for later incorporation into Annex B. Issues relative to the interpretation of standard phrases will be forwarded to the Chairman of the SSRAC with supporting documentation and recommendations for review prior to effecting contract modifications at the local level. Changes required by such a review will be promulgated by the SSRAC Chairman.

G. Utilization of Standard Phraseology for invoking Category II Standard Items (Section A of Annex B) is mandatory. Standard Phraseology in Sections B through G of Annex B must be utilized when applicable.

H. Planner's Notes must be used to explain "fill in the blank" information on MSWTs, CSWTs, SWTs, and LWTs. Planner’s Notes may also be used to provide other types of |information that may be of value to the Planner, for example:

When accomplishing generator repairs, separate Work Item must be invoked using 311-022 template to accomplish testing.

Verify and update drawings and revisions.

SECTION V

WORK ITEM PHILOSOPHY

A. Work Items are technical documents that convert work requirements to clear, concise, well-defined, and contractually sound terms. Each becomes a legally binding contractual document that is the determining factor as to what the Government will receive from the contractor accomplishing the work. Each must provide sufficient information to the contractor to define precisely the minimum requirements of the Government and be free of language open to diverse interpretations.

B. Work Items normally describe what to do rather than how to accomplish the work. There are instances where the Government desires that the work must be accomplished in a specific manner. In these instances, the procedures must be clearly defined, but must not be so worded that they unreasonably restrict competition.

C. Work Items must be written in a logical sequence of work operation whenever possible (i.e., remove, disassemble, inspect, report, repair, assemble, install, and test).

D. Each Work Item must clearly define the work requirements and be as self-contained as possible to enable the user to understand the requirements without having to research a myriad of reference data. The Work Item requirements must include the minimum specific tests and inspections that must be accomplished by the contractor to ensure that the desired quality is achieved.

E. Work Items must be limited to the requirements necessary to achieve the desired result and must not upgrade equipment and installations to exceed original design requirements without approval of the customer. Work Items must not alter the military characteristics of any ship or in any other manner require repairs or modifications to equipment or systems that would normally be considered to be under the purview of the Fleet Modernization Program (A and K ALTS) or Type Commander Alterations Equivalent to a Repair (AER - D and F ALTS) without prior approval of NAVSEA.

SECTION VI

FORMAT

A. The following format must be utilized in the preparation of SIs and LSIs:

NAVSEA or SUPSHIP or REGIONAL MAINTENANCE CENTER
STANDARD ITEM or LOCAL STANDARD ITEM

FY-__

ITEM NO: _____
DATE: _____
CATEGORY: _____

1. SCOPE:

   1.1 Title: (When the length of a title continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

2. REFERENCES:

   2.1 (Standard Items must be listed first, if referenced in the Item.)

   2.2 (When the length of a reference continues past one line, the beginning of the subsequent lines will be indented the same as the first line, as demonstrated here.)

3. REQUIREMENTS:

   3.1

   3.2

      3.2.1

         3.2.1.1

4. NOTES:

   4.1 None. *

* In the event there are no NOTES, the word None must appear in 4.1.

of # ITEM NO: ___
FY-_

B. The following format must be used in the preparation of Work Items and templates:

SHIP: _____ ITEM NO: _____

COAR: _____ PCN: _____
(Delete line if not required)

*____ FILE NO: (IF APPLICABLE)_____CMP: (IF APPLICABLE)_____
(*SWT, CSWT, LWT, BWST or MSWT as applicable)
REVISED: (IF APPLICABLE)_____PLANNER: _____

1. SCOPE:

1.1 Title: (When the length of a title continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.2 Location of Work:

1.2.1 (If only one, use 1.2.1 or Not Applicable)

1.2.2 (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.3 Identification:

1.3.1 Quantity ( ), (If only one, use 1.3.1 or Not Applicable)

1.3.2 (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.4 Security Classification of Equipment, Components, Spaces and Documents: The Equipment, Space or Document is classified and subject to the applicable provisions of the National Industrial Security Program Operating Manual, DOD 5220.22M (0584-LP-179-6400). (Omit when not applicable)

NOTE: All entries for this paragraph are to be listed. Attachments are not allowed.

1.4.1 Spaces: (Omit when not applicable) (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

of # ITEM NO: _____

SHIP: _____

1.4.2 Equipment: (Omit when not applicable) (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

1.4.3 Documents: (Omit when not applicable) (When the length continues past one line, the beginning of the subsequent lines will be indented to the first character of the first line, as demonstrated here.)

2. REFERENCES:

2.1 (Standard Items must be listed first, if referenced in the item)

2.2 (When the length of a reference title continues past one line, the beginning of subsequent lines will be indented the same as the first line, as demonstrated here.)

3. REQUIREMENTS:

3.1

3.1.1

3.2

3.2.1

3.2.1.1

3.2.2

3.3

The following format must be used to identify each repair part in paragraph 3 (use Standard Phrase B30).

TOTAL QUANTITY REQUIRED	NAME OF PART	PIECE NO.	REF. NO.	FIGURE DRAWING NO.	PART NO.

of # ITEM NO: _____

SHIP: _____

4. NOTES:

4.1 None. *

4.1.1

4.2

* In the event there are no NOTES, the word None must appear in 4.1.

5. GOVERNMENT FURNISHED MATERIAL (GFM):

5.1 LLTM:

5.1.1 None. ** ***

5.2 PUSH MATERIAL:

5.2.1 None. ** ***

5.3 KITTED MATERIAL:

5.3.1 None. ** ***

** In the event there is no GFM, the word None must appear.

*** In the event there is GFM, the following format must be used in 5.

5.1 LLTM:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.1.1					

5.2 PUSH MATERIAL:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.2.1					

of # ITEM NO: _____

SHIP: _____

5.3 KITTED MATERIAL:

TOTAL QUANTITY PROVIDED	NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.3.1					

NOTE: PARA NO. -- Identify what basic paragraph in body of Work Item requires the part/material.

of # ITEM NO: _____

C. SIs, LSIs, templates, and locally prepared Work Items must be prepared in a 12 character per inch (CPI) font, with a left, right, top, and bottom margin of one inch.

NOTE: FORMAT TO SUPPORT THE AUTOMATED INFORMATION SYSTEM UNDER ONGOING REVIEW

SECTION VII

INSTRUCTIONS FOR PREPARATION AND UTILIZATION OF WORK ITEMS

A. WRITING STANDARD ITEMS AND LOCAL STANDARD ITEMS:

1. The heading of each SI or LSI must be in accordance with Section VI.A. The FY, ITEM NO., DATE, and CATEGORY must be assigned to each SI by the SSRAC, or by the SUPSHIP or REGIONAL MAINTENANCE CENTER as applicable for LSIs. The date must be the date of issue of an SI or LSI when changed or reviewed (even when no change was made). The FY must be changed to show the fiscal year of use. This will always determine the latest version of the particular SI or LSI.

2. When preparing SIs and LSIs reference revision designations (letters and/or numbers) will not be included.

3. The remainder of SIs and LSIs must follow the criteria of Section VII.B.2.a and B.3 through B.5, except SUPSHIP/RMC references are not to be used for SIs.

B. WRITING WORK ITEMS, TEMPLATES AND, REQUEST FOR CONTRACT CHANGE (RCC):

1. The heading portion of SWTs, CSWTs, LWTs, BWSTs, or MSWTs and Work Items must be completed as follows, using capitalization throughout:

a. SHIP - Name and hull number of ship or number of each boat or craft.

b. COAR - Customer Order Acceptance Record (COAR) is a locally assigned 5-digit number. The first 2 digits identify the funding category. The last 3 digits are the same as the specification package number and reflect the Availability Identification Number of the ship, boat or craft.

c. FILE NO - The SWT, CSWT, LWT, BWSTs, or MSWTs file number if applicable.

d. REVISED - Day, abbreviated month, and year (DD MMM YYYY) of either original issuance date or revision date, for example 06 APR 1995 (applies to templates only).

e. ITEM NO - The item number must be assigned in accordance with Section VII C.

f. PCN - The Project Control Number, or PCN, is the identifying number of the applicable work authorization document. This can be the SWLIN number and the applicable line item(s), number(s), the job control number(s) (JCN) from the OPNAV 4790/2K form, Ship's Maintenance Action Form (SMAF), or a number which will identify the source from which the

authorized work requirements are being written. Do not resolve space limitations by inserting PCN data in any Work Item paragraph.

g. CMP - The Class Maintenance Plan is the identifying number assigned to the maintenance action, which the Work Item accomplishes. The first 3 digits of the CMP generally follow the ESWBS numbering system.

h. PLANNER – Last, First name of each person contributing to the preparation of the Work Item.

2. Paragraph 1 must be SCOPE. The SCOPE paragraph must be completed as follows:

a. Subparagraph 1.1 - The word "Title" must appear first, followed by a colon. A brief title will then follow in noun, verb order; the noun must be title case (first letter of each word is capitalized) and the verb lowercase. Give a brief description (which can include a descriptor that clearly identifies the work item uniqueness where generic titles make work item identification confusing) of equipment using common shipboard terminology, followed by a semicolon, and work to be done. Title must be singular. The completion of this paragraph is mandatory. Examples are as follows:

REPAIR TITLES:

2A Main Feed Pump; repair
Fire Main Piping Zone One; repair
Surface Search Radar; install
Bake Oven; repair
Dry Cleaning Plant; repair (OPTION ITEM)

SHIP ALTERATION/MODERNIZATION TITLES:

ShipAlt CG47-00123K, Title; accomplish

ORDALT 12345, Title; accomplish

ALTERATION EQUIVALENT TO REPAIR (AER) TITLES:

CG47 Class AER 123, Title; accomplish

b. Subparagraph 1.2 - The words "Location of Work" followed by a colon must appear first.

(1) Subparagraph 1.2.1 - A compartment designation must be listed when applicable. Appropriate deck and frame designations must also be used. Examples are as follows but are not all inclusive:

Engine Room Number One (4-174-0-E)	Main Deck, Frame 115
Auxiliary Machinery Room No. One (5-67-0-E)	Test Lab (2-174-6-Q)
JP-5 Pump Room (5-132-0-E)	Weather Deck 02 Level, Frames 218-227, Port
Pilot House (04-130-0-C)	Service Tank (4-220-1-F)
Generator Room (3-370-0-E)	Passage (1-42-01-L)

Where several locations are involved, each will be listed in a separate subparagraph. Care must be exercised in the description of the Location of Work, as this, too, is a critical part of the contract, which frequently is the only basis for determining the applicability of the work requirements. The phrase "Throughout the Ship" must be used to avoid inadvertent omissions for work requirements that are in fact widely dispersed. This phrase, however, must not be used when a concise and explicit location can be readily identified. The security classification of the spaces must only be listed in subparagraph 1.4. If this paragraph is not utilized, indicate such by inserting the words "Not Applicable" after subparagraph 1.2.1. Examples are as follows:

Throughout the Ship
Not Applicable

c. Subparagraph 1.3 - The word "Identification" followed by a colon must appear first.

(1) Subparagraph 1.3.1 - Describe existing equipment to be worked on, to be permanently removed, or to be removed and replaced. Equipment is defined as, "all non-expendable items needed to outfit/equip an individual or organization, i.e., a ship" (see JOINT PUB 1-02, Department of Defense Dictionary of Military and Associated Terms dated 12 April 2001). If existing equipment can be identified by manufacturer, model, serial number, part number from reference listed in paragraph 2, APL number, or equipment designation, i.e., AN/SPS-10E, and serial number, then it must be listed. If existing equipment to be identified does not lend itself to number identification then describe the item to be worked or replaced, e.g., Lifeline Stanchions, etc. Insert the word "Quantity" followed by the appropriate number and |2-letter abbreviation of unit of issue (see “UNIT OF ISSUE” table.) in parentheses preceding the equipment or item identification, i.e., Quantity (10 EA), Quantity (25 FT) or Quantity (25 SF), etc. If this paragraph is not utilized, indicate such by inserting the words "Not Applicable" after subparagraph 1.3.1. Examples are as follows but are not all inclusive:

- Quantity (One EA), Liner, IC/E46-6, Part No. 50857-501
- Quantity (One EA), Propeller, Right-Hand, MFR: Bird-Johnson Co., APL 834010072

- Quantity (One EA), Number One Centralized Cooling Pump, Type DH6080D, RPM 1800, MFR: Buffalo Pumps Inc., APL 016151120
- Quantity (One EA), Bolted Plate Manhole Cover, (3-368-4), 15 Inch by 23 Inch, Flush Deck Oil Tight, Item No. 0015 of 2.2, Including Cover Plate Ring and Angle Ring
- Quantity (2 EA), Zinc Anode, Type ZHC-23, 6 Inch by 12 Inch by 1.25 Inches Thick

- Quantity (One EA), 5 Inch Gear Operated Butterfly Valve, Valve No. SW-V-355B
- Quantity (One EA), Ships Service Switchboard Number One, 1S-2S Bus Tie Breaker, ACB-400HR, MFR: SPD Technologies Inc.
- Quantity (4 EA), Bulkhead Seal, Type ND, Part No. US71243, MFR: Wartsila Lips Inc., APL: 831000375
-

UNIT OF ISSUE

EA: EACH	BX: BOX	FT: FEET	LF: LINEAR FEET
PC: PIECE	KT: KIT	SF: SQUARE FEET	

d. Subparagraph 1.4 - Must be used only when access to classified spaces, equipment, or documents is required. The security classification (e.g., SECRET, CONFIDENTIAL, etc.) of the space, equipment, or document must be shown parenthetically in upper case letters, following its unclassified title. For spaces, appropriate deck and frame designations must also be used. For example:

NOTE: All entries for this paragraph are to be listed. Attachments are not allowed.

1.4.1 Spaces:

1.4.1.1 Sonar Control Room (01-140-O-C) (CONFIDENTIAL)

1.4.1.2 CIC (01-158-0-C) (CONFIDENTIAL)

1.4.2 Equipment:

1.4.2.1 XXX (CONFIDENTIAL)

1.4.3 Documents:

1.4.3.1 XXX (CONFIDENTIAL)

3. Paragraph 2 must be REFERENCES.

a. The indiscriminate use of references in Work Items serves only to confuse the users, makes the actual work requirements vague, and does not promote the concept of providing clear and contractually sound Work Items. Conversely, the omission of required reference data does not promote this concept either. Therefore, references must be used when required, but they must always be thoroughly researched and then used selectively. Ideally, what is desired is a Work Item which includes no textual references and which contains all necessary data; a Work Item that stands alone.

b. The General Specifications for Overhaul of Surface Ships (GSO) is a primary source for technical requirements for alterations and for the refurbishment and repair of existing ship's equipment and components; therefore, it must be considered when preparing Work Items.

c. The following general rules apply for references:

(1) List applicable references in paragraph 2 REFERENCES in the order in which they appear in the body of the Work Item, with the exception of Standard Items which when listed in the body (e.g., of paragraph 3 REQUIRMENTS, paragraph 4 NOTES, attachments, or tables), must always be 2.1. Do not list references that are not referred to in the body of the Work Item.

(a) When Standard Items are listed as 2.1 the Fiscal Year must be included. (Standard Items (FY18), Standard Items (FY19))

(2) In the event that there are no references, the word "None." is to follow 2.1.

(3) Reference Titles within Work Items will:

(a) Appear as they appear on the reference document (i.e. Drawing Title Block, Technical Manual title).

(b) Capitalize the first letter of each word in a title with the exception of articles and short prepositions.

(c) Note the revision designation (letter and/or number) of each reference. If the reference is the first issuance, do not use Rev Ø, Rev – or Rev to indicate this.

(d) Examples include:

2.1 Standard Items (FY19)

2.2 MIL-STD-2003A, Electric Plant Installation Standard Methods for Surface Ships and Submarines

2.3 S9086-RK-STM-010 CH-505/Rev 5, Piping Systems

2.4 SL460-AA-HBK-010 Rev 1, Handbook for Inspection, Packaging, Handling, Storage, and Transportation

2.5 S9169-AE-SSM-010, LPD 17 Class Equipment Manual for Advanced Enclosed Mast/Sensor (AEM/S Mast)

2.6 807-5037131 Rev C, Antenna Group OE-373A/SPS-48E Outline and Installation Drawing"

2.7 Force Revision, 3-20

2.8 List of Effective Pages, UIC: V20134 Work Center: EM01 Date: 04/23/20

2.9 Maintenance Index Page, MIP Control Number: 2411/016-C9 Transmission and Propulsor Systems (LCS 5 Class and follow)

2.10 Maintenance Requirement Card, MRC Control Number: 49 J3KR N (Visually Inspect Main Propulsion Shaft Flexible Couplings)

(e) Equipment Technical Manuals and Drawings which are not NAVSEA Standard Plans must be identified by group number, drawing number, latest revision and change letter (A, B, C, etc.) only if applicable (do not use Rev Ø, or Rev), and title as it appears in the drawing title block, with the exception of capitalization. Capitalize the first letter of each word. For example:

252-5351151 Rev L, Propulsion Control System, Circuit K-GT, Cabling Diagram

S9585-AH-OMI-010, Rev 2, Sliding Padeye Receiving Units, Deck Mounted Models D-9 and D-12, and Tilting Models T-12 and T-12A

S9625-AU-MMA-010, Change C, Electrically Heated Deicing Window

(4) References must be limited to applicable technical data such as Standard Items, drawings, equipment technical manuals, Military Standards (MIL-STDs), Test Memos, and NAVSEA approved Preservation Process Instructions (PPIs). Technical data means recorded information (regardless of the form or method of the recording) of a scientific or technical nature (including computer databases and computer software documentation). This term does not include computer software or financial, administrative, cost or pricing, or management data or other information incidental to contract administration. The term includes recorded information of a scientific or technical nature that is included in computer databases. For these purposes, technical data includes the characteristic of a particular science, trade or profession.

(a) Titles for all references must be as they appear on the reference with the exception of capitalization and words such as "Naval Ships Technical Manual". Capitalize the first letter of each word, with the exception of minor words or conjunctions (the, of, etc.). For example:

NAVMED P-5010-6, Manual of Naval Preventive Medicine, Chapter 6, Water Supply Afloat

S9086-T8-STM-010/CH-593/Rev 7, Pollution Control vice S9086-T8-STM-010/CH-593/Rev 7, Naval Ships Technical Manual Chapter 593 Pollution Control

(b) In the event a requirement has been deleted after a Work Item has been developed, the planner must use the following format:

2._ Intentionally Left Blank

(c) Reference format for 4720 Material Summaries must be as the File No. and title appears on the 4720 cover sheet. Reference format for Design Memos, Planning Memos, and Test Procedures, Liaison Action Records (LARs), Reverse Liaison Action Records (RLARs)must be as follows:

DM 10-09, MARMC, Title
DM 97-07 Rev C, SWRMC, Title
PM 390-51, SERMC, Title
PM 230-01 Rev B, SPAS, Title
24310-7-020, Title of Test Procedure/Test
24510-5-001 Rev B, Title of Test Procedure/Test
LAR 73622/DDG57/1132310; Requirement for Protective Cages Around Sensors
RLAR 73622/DDG97/1151906; Material and Design Corrections for Protective Covers

(d) For references available on compact disk, insert the source CD volume number in parentheses after the title. For example:

SE000-01-IMB-010, Navy Installation and Maintenance Book (NIMB), Section VI, Electronics Installation and Maintenance Book - General Maintenance (Source CD: N0002400003)

(e) For references that are proprietary and must be used to write a work item, however, cannot be distributed to the execution contractor due to copyright laws, the reference must identify (Proprietary) at the end of said reference. The contractor will need to obtain the information on their own.

100-7026706 Rev ___, Unit Structural Arr Dwg Assy Unit 3420 (PROPRIETARY)

(5) Instructions, Notices, Naval Messages, and letters with financial, administrative, management data or other information incidental to contract administration must not be included as references.

(6) Documents such as federal regulations outside the Department of Defense and public laws must not be referenced except where it is necessary to show the contractor that there are public laws and regulations with which he must comply but are outside the scope of the MSR agreement and the requirements of that particular Work Item.

(7) When using Naval Ship's Technical Manuals (NSTM) and GSO as references, ensure that only applicable portions are referenced. For example:

2._ S9AA0-AB-GOS-10, General Specifications for Overhaul of Surface Ships (GSO)

3._ Remove existing and install new flanged take down joint assembly in accordance with Section 506d of 2._.

4._ S9086-T8-STM-010/CH-593/Rev 7, Pollution Control

5.__ Accomplish sanitary and hygienic procedures of Paragraph 593-4.2.3 through 593-4.2.4.1.3 of 2._.

(8) Appropriate Program Office approved 4720/3 Material Identification Documents for ShipAlts, AERs, or repair kits may be listed in paragraph 2 as a reference. The reference must be used to identify the GFM for the identified ShipAlt, AER, or repair process in paragraph 5 of the Work Item. (See Section VII, B.3.c.)

(9) A "zero-tier reference" is a specification, standard, drawing that is cited in the contract (including its attachments). A "first-tier reference" is either: (1) a specification, standard, or drawing cited in a zero-tier reference, or (2) a specification cited in a first tier drawing. All zero-tier and first tier references are mandatory for use. All lower tier references must be used for guidance only.

d. If short enough (single page or less), the reference documentation must be lifted out or paraphrased and written in the body of the Work Item, both for clarity of the requirements and for building a Work Item that can stand alone.

e. In considering data for use as a reference, data must be thoroughly researched to determine that:

(1) It will not begin a chain of unnecessary references.

(2) If restricted for use, that written authorization is obtained prior to using proprietary clauses.

(3) It is the latest version or revision of the subject data.

(4) It is available in reproducible form for distribution.

(5) It is absolutely essential to accomplish the required work.

f. The security classification of a classified reference must be shown parenthetically in upper case letters, following its unclassified title.

g. The method for using SIs and LSIs as references is to list in paragraph 2 REFERENCES, as follows:

(1) SIs or LSIs, regardless of the number that are used as references in a particular Work Item, are listed as "Standard Items" in paragraph 2.1, and specifying the particular SI or LSI number in paragraph 3 REQUIREMENTS or paragraph 4 NOTES.

h. MIL-SPECs are not listed in paragraph 2 as references. They must be included in the REQUIREMENTS paragraph of the Work Item.

i. Care must be exercised when invoking references. Three degrees of contractor compliance may be required and enforced depending on the invoking statement:

(1) When it is desired to direct a contractor to accomplish work strictly in accordance with the reference, the invoking phraseology must be:

(a) "___ in accordance with 2._", or

(b) "Accomplish the requirements of 2._", or

(c) "___ conforming to 2._".

(2) When the reference data is only partially applicable, the invoking phraseology must be: "___ in accordance with 2._", and then list the exceptions in a subparagraph.

(3) When strict compliance is not required and the reference is only listed for information and guidance, the invoking phraseology must be: "___, using 2._ for guidance". However, it can become a catch-all and its use must be held to a minimum.

(4) When a Work Item references Class and Hull specific configuration and Ship Alteration information, planning activity must validate that reference information (Ship Alteration drawings, LARS, "as built drawings", Test Procedures, etc.) used is correct via the assigned Class Planning Yard.

j. SUPSHIP/RMC/SURFMEPP References. When material to be used as a reference is too complex or lengthy to be lifted out and included in the body of the Work Item and the documentation is not appropriate to use directly as a reference, then the material must be lifted out and rephrased as needed to be used as a SUPSHIP/RMC/SURFMEPP Reference.

(1) SUPSHIP/RMC/SURFMEPP References must be issued with a cover sheet attached to the reference documentation showing SUPSHIP (City)/RMC/SURFMEPP Reference , Rev _, and date issued.

(2) The originating SUPSHIP/RMC/SURFMEPP must be responsible for maintaining a master file of SUPSHIP/RMC/SURFMEPP References and revised versions. Revisions to SUPSHIP/RMC/SURFMEPP References must be identified as Rev A, Rev B, etc.

(3) The use of SUPSHIP/RMC/SURFMEPP References must be limited to those cases where no other recourse exists to adequately specify work requirements in a Work Item. The modified versions of these appendices would be identified as SUPSHIP/RMC/SURFMEPP References. Likewise, certain portions of NSTMs would be identified for use in a Work Item as a SUPSHIP/RMC/SURFMEPP References.

k. Planned Maintenance System (PMS) documents may be used as references in Work Items when required, including but not limited to, LCS and DDG 1000 Class Ships supporting the accomplishment of preventive maintenance availabilities.

4. Paragraph 3 must be REQUIREMENTS. The REQUIREMENTS paragraph of the Work Item is that portion which must detail the minimum work and material requirements not already invoked by Standard Items. Quality assurance requirements are also inserted in this section. Any additional specific tests and reports required must be delineated. Care must be taken to document requirements only once. Work Item clarity is not improved if Standard Item requirements are restated in paragraph 3, in fact this practice can insert confusion concerning sequencing and inspection of work as well as estimating.

a. Category II SIs must be invoked to the maximum extent possible when preparing Work Items and Templates.

b. The Standard Phraseology of Annex B must be used in preparing Work Item requirements (see Section IV F).

c. When abbreviations and acronyms are used, the complete phrase must be written out the first time it is used in a Work Item, followed by the abbreviation or acronym in parentheses. After that, the abbreviation or acronym may be used throughout the Work Item. Abbreviations or acronyms commonly used in the naval ship repair industry need not be defined.

d. Paragraph 3.1 must include phraseology that begins with a verb and refers to paragraphs 1.2 and 1.3. (e.g., 3.1 Remove existing and install new the equipment listed in 1.3 and located in 1.2, using 2.2 for guidance) No more than 3 levels of subparagraphs are allowed in specifications; for example, 3 levels of indentation are represented by subparagraph, 3.X.X.X." Paragraphs at the 3.X level must be verb, noun format, subparagraph levels 3.X.X., and 3.X.X.X, are not required to be verb, noun format.

(1) In paragraph 3, once you have identified the location and equipment listed in 1.2 and 1.3, it is not necessary to repeat that identification throughout the requirements, unless different actions are being accomplished.

e. Paragraph 3.1 of the REQUIREMENTS will be used to require the contractor to remove and install interferences for only those systems listed in 3.1 of Category I Standard Item 009-23.

(1) In paragraph 3, once you have identified the location and equipment listed in 1.2 and 1.3, it is not necessary to repeat that identification throughout the requirements, unless different actions are being accomplished.

f. Repair and overhaul of equipment and systems, as authorized by TYCOM, must be implemented in the REQUIREMENTS paragraph by a description of the work to be accomplished. The written sequence of work requirements must normally be in chronological sequence of work accomplishment. Each subparagraph must express a complete thought in

clear, concise language that is contractually sound. Wording that is ambiguous must not be used. Accept or reject criterion for use by Quality Assurance inspectors must be definitive.

g. For complex Work Items that would be cumbersome and cause confusion if normal chronological work sequence were employed, an alternative trade or component breakdown method may be employed. This method addresses each trade or component's work requirements separately, either in consecutive subparagraphs of the REQUIREMENTS or in several consecutively numbered Work Items. When this method is used, the normal time sequence of work within the trade or component is maintained.

h. Contractor furnished repair parts to be replaced must be listed, including the quantity required, 2-letter abbreviation of unit of issue (e.g. EA, PC, BX, KT, etc.), the manufacturer's part number or plan number and piece number as listed in the equipment technical manual or plan. GFM must be listed in paragraph 5. Contractor furnished raw materials (e.g. plate, beams, bars, piping, casting components, etc.) and common shelf items (e.g. fasteners, gaskets, cotter pins, O-Rings, seals, etc.) must be identified by noun name in paragraph 3 of the Work Item without further identification as to manufacturer's part number or piece number.

i. In the event a requirement has been deleted after a Work Item has been developed, the planner must use the following format:

3._ Intentionally Left Blank

j. After a Work Item is issued, any changes implemented in the Work Item resulting from a Request for Contract Change (RCC), Condition Report (CR), Inspection Report (IR), etc., must be prepared in accordance with Section VII.

k. Inspections and tests that are not already required by Standard Items must be identified by (I)(Q) or (V) symbols inserted in a Work Item to establish a point in the sequence of accomplishment of work, at which time the repair activity must inspect/verify and document the inspection or test. Inspections and tests requiring Government notification must be identified by (G) symbols inserted in a Work Item to establish a point in the sequence of accomplishment of work at which time the SUPERVISOR must be notified to permit observation of the specific inspection or test. The (I)(Q) and (V) inspections and (G) notifications are included in the requirements paragraph of the Work Item by inserting the appropriate symbol(s) in parentheses, e.g., (I), followed by the specific inspection/test within quotation marks, e.g., "HYDROSTATIC TEST", in upper case letters at the left margin immediately preceding the paragraph with the inspection/test. For example:

(I)(G) “HYDROSTATIC TEST"

When the inspection requirements [(I)(Q) and (V)] or notifications [(G)] are identified in the Standard Item, they must not be identified again in the Work Item.

(1) Symbols are defined as:

(I) inspections require verification and documentation by a separate individual, other than the person who has accomplished the work, who is qualified as an inspector and currently certified where required by the technical documents (e.g., NBPI, NACE, nondestructive testing, electrical cableway inspections, etc.).

(V) inspections require verification by either the qualified tradesperson, trade supervisor, or inspector.

(Q) inspections require verification and documentation by a qualified Technical Representative in accordance with NSI 009-90 and associated PCP requirements.

(G) is a symbol inserted in a Work Item to establish a point in the sequence of accomplishment of work at which time the SUPERVISOR must be notified to permit observation of a specific inspection or test by the Government.

(2) In order to invoke inspections and tests requiring annotation with (I), (V), or (G) symbols, the following criteria must be met:

NOTE: SUBSTITUTE (Q) FOR EITHER AN (I) OR (V) WHEN APPLICABLE.

(a) Manufacture, installation, and repair (welding, brazing, machining, or lapping) of Level I fittings or components:

• Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, seat leakage tests, joint tightness tests) used for certification of work completed	(I)(G)
• Inspections performed to verify final torque of pressure boundary parts and fasteners used in Level I components	(I)
• Inspections performed to verify permanent Level I markings at installation/assembly	(I)(G)
• Inspections performed for post-machining/manufacture of any Level I part/component	(I)
• Inspections for ball valve stack heights, valve blue checks, and inspections performed on any sealing surface when work is performed using controlled assembly	(I)
• Inspections performed to verify Level I pressure boundary parts replacement	(I)(G)
• Mechanical measurements used to verify wall thickness of Level I components	(I)
• Cleanliness inspections when required by MIL-STD-1330 (oxygen, nitrogen, and hydrogen systems)	(I)(G)
• Receipt inspection of Level I material	(I)
• Nondestructive Testing VT	(I)
• Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
• RT Film Interpretation	(I)(G)

(b)	Welding/brazing of P-1, P-LT, P-3a piping systems or Class A-F, A-1, A-2, A-3, A-LT, M-1, T-1 welding, and P-2 steam service:	
	• Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, seat leakage tests, joint tightness tests) used for certification of work completed	(I)(G)
	• Mechanical measurements used to verify wall thickness of Level I components	(I)
	• Cleanliness inspections when required by MIL-STD-1330 (oxygen, nitrogen, and hydrogen systems)	(I)(G)
	• Fit-up inspection of Class P-3a joints on steam piping	(I)
	• Nondestructive Testing VT	(I)
	• Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
	• RT Film Interpretation	(I)(G)
(c)	Welding on ship/craft listed in Attachment A of SI 009-12 hull or structure when required by the fabrication document:	
	• Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, structural boundary tests) used for certification of work completed	(I)(G)
	• Nondestructive Testing VT	(I)
	• Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)
	• RT Film Interpretation	(I)(G)
(d)	Weight handling equipment manufacture and repair:	
	• Inspections performed for all acceptance testing (e.g., static load testing, drop tests, pull tests, weight tests) used for certification of work completed	(I)(G)
	• Nondestructive Testing VT	(I)
	• Nondestructive Testing MT/PT (Final Only)	(I)(G)
	• Nondestructive Testing UT (Final Only)	(I)(G)
	• RT Film Interpretation	(I)(G)
(e)	Corrective maintenance within the certified boundaries of cranes (as defined in NSTM 589):	
	• Inspections performed for all acceptance testing (e.g., static load testing, drop tests, pull tests, weight tests) used for certification of work completed	(I)(G)
	• Nondestructive Testing VT	(I)
	• Nondestructive Testing MT/PT	(I)(G)
	• Nondestructive Testing UT (Final Only)	(I)(G)
	• RT Film Interpretation	(I)(G)
	• Weight testing to certify or recertify shipboard cranes when repairs are performed.	(I)(G)
(f)	Maintenance on aircraft launch and recovery equipment:	
	• Inspections performed for all acceptance testing (e.g., hydrostatic testing, drop tests, seat leakage tests, joint tightness tests) used for certification of work completed	(I)(G)
	• Nondestructive Testing VT	(I)
	• Nondestructive Testing MT/PT/UT (Final Only)	(I)(G)

	• RT Film Interpretation	(I)(G)
(g)	Preservation of critical surfaces:	
	• Surface preparation, conductivity/chloride tests, and film thickness inspections (including profile, holiday, and stripe coat inspections) of surfaces identified in Standard Item 009-32	(I)(G)
	• Environmental readings	(V)
(h)	Preservation of non-critical surfaces:	
	• Surface preparation and film thickness inspections (including profile, holiday, and stripe coat inspections) of surfaces not identified as critical in Standard Item 009-32	(I)
	• Environmental readings	(V)
(i)	Final testing, final alignment, process control, and work acceptance of mechanical, electrical, and structural work not covered above, and major safety related inspections:	
	• Any final test that is used as the verification that all work has been performed satisfactorily (e.g., final hydrostatic tests and final operational test). This does not include final assembly or dimensional verifications	(V)(G)
	• All final alignments	(I)(G)
	• Any final work acceptance inspections of compartments and tanks (e.g., tank closures and compartment turnovers)	(V)(G)
	• Visual inspection of the installed waterproof membrane	(I)(G)
	• Safety inspections prior to entry into tanks, voids, and cofferdams which contain Motor Gasoline (MOGAS) or other immediately dangerous to life or health (IDLH) atmospheres	(I)(G)
(j)	Other inspections or tests:	
	• Any inspection/test that is not covered above and reports are not required to be submitted to the Government	(V)
(k)	(Q) inspections require verification and documentation by a qualified Technical Representative in accordance with NSI 009-90 and associated PCP requirements:	
	• Witness pre repair operational tests, adjustments, and inspections to determine equipment condition, when required by the Work Item.	(Q)
	• Inspect equipment and component parts during disassembly, to include process material and process performance.	(Q)
	• Verify process documents whereas found reports are required, to include clearances and conditions, and submit as-found report. Include in as-found report the information required by 3.4.3.1 through 3.4.3.4.	(Q)
	• Inspect new and repaired areas and component parts of the equipment prior to assembly to ensure compliance with Navy technical manual requirements and Standard Items.	(Q)

- Inspect and provide technical guidance and assistance during process performance, equipment assembly and adjustment, and when specified, coating application. Verify assembly procedures, sizes, and clearances comply with manufacturer's requirements, Navy technical manual requirements, and coating application procedures when specified. (Q)
- Witness operational tests, make adjustments, and document test and process performance results, including, when required, final inspections of coating systems. (Q)

(3) When modifications are written to the original Work Items, (I), (V), and (Q) inspections and (G) notifications must be inserted where required.

(4) Where additional Government oversight is deemed necessary by the SUPERVISOR to ensure contract compliance in a specific problem area, a (G) may be added to an inspection or test currently not requiring Government notification in the criteria identified above.

(5) Never use (G) alone; must be preceded by an (I), (V), or (Q).

l. Reports - Written reports are necessary in order to record results of inspections, tests, and work accomplished. The planner must keep in mind that reports are costly to generate and to process. Reports must only be required in Work Items when necessary. Do's and don'ts for reports are as follows:

(1) Do require a report for machinery history with condition identified readings.

(2) Do require a report when a unique piece of equipment has had many problems.

(3) Do require a report listing unsatisfactory conditions.

(4) Do require machinery closing reports if not recorded on test memos or data sheets.

(5) Don't require a report to track contractor progress on a job.

(6) Don't require a report following a test and/or inspection (except where recorded test data is necessary).

(7) Don't require a report for each piece of equipment. Have the contractor submit a report in matrix format when criteria are the same for each item. (Example: Five motors being overhauled in accordance with Standard Item 009-17.)

(8) Don't require a report just so you will know the item is being worked.

m. Process Control Procedure (PCP) requirements not already required by Standard Items must also appear in the REQUIREMENTS paragraph. Invoking the requirement to develop Process Control Procedures must be invoked only where contractual compliance of the product cannot be ensured by inspections and tests. Reference must be made to applicable standards or specifications that govern the process to be controlled. Any requirements that must be addressed by the procedure must be explicitly identified in NSI 009-09 requirements. The following additional requirement applies for PCPs:

(1) PCPs must be written for all non-nuclear surface ship systems and equipment listed in the most current version of CNRMC Instruction 4700.5_ Series (Guidance and Policy for Surface Ship Critical Systems and other Work Requiring Process Control Procedures).

n. It is assumed that MSR Agreement Contractors responding to a solicitation do have the necessary competence to ensure satisfactory completion of the work requirements of the specification. Sole source requirements (technical representatives, vendors, directed subcontractors, etc.) must not be invoked in any Work Item without sufficient justification to permit a Justification and Approval (J&A).

o. Appropriate Front Loads and Level of Effort (LOE) Growth Reservations provide a means to accomplish repairs which could not be clearly defined in advnce of the ship's availability. Front Loads and Level of Effort (LOE) Growth Reservations are to be based upon historical analysis, published by CNRMC and SEA02. Use of Front Loads and Level of Effort (LOE) Growth Reservations can reduce the need to draft and negotiate Requests for Contract Changes (RCCs).

NOTE: Planning Activity should validate with Project Manager if the Level of Effort to Completion (LOE2C) CLIN will be utilized in the Ship Repair and Modernization Contract being worked on. If LOE2C CLIN is being used adding Level of Effort (LOE) Growth Reservations within Work Items must be controlled. Planners should ask for guidance before adding LOE paragraphs within Work Items.

5. Paragraph 4 of the Work Item must always be NOTES and must contain information or explanations that do not lend themselves to inclusion in the REQUIREMENTS. These notes must not place requirements on the contractor.

SAMPLE NOTES

4.1 This is an LOA item.

4.2 Known source for butterfly valves:

Flow-Technology, Inc.
49 Century St.

Jacksonville, FL 32211
Telephone (904) 721-1968

6. Paragraph 5 must be GOVERNMENT FURNISHED MATERIAL (GFM). All GFM listed in paragraph 5 must be installed by the requirements invoked in paragraph 3.

a. Major components or equipment with anticipated delivery dates after the commencement of the availability must be specified in the Work Items. This includes turnaround items in the Navy Refurbishment Program. Following each line item of GFM, indicate the paragraph number in which the material is required.

b. Material must be made GFM when:

(1) It is considered likely the contractor will have difficulty in procuring from normal sources in a timely manner (e.g., it cannot be procured and received by the contractor during the period from planned award to planned overhaul start).

(2) It is not normally available outside of the Navy Supply System. If necessary GFM is not available in the NSS, alternate plans of action will have to be devised.

(3) It is Program material reserved for accomplishment of NAVSEA ShipAlts (Fleet Modernization Material).

(4) It is mandatory replacement material stocked by the Navy to support designated ship Class Maintenance Plan.

(5) It is peculiar to the Navy.

(6) Repair or Alteration Material and Special Tools already in the possession of and controlled by a Government entity (e.g. Ship's Force, TYCOM, NSWC etc.) which will be turned over to a Maintenance Team.

c. Categories of GFM listed in paragraph 5 are defined as follows:

(1) LLTM: Material supporting an availability whose delivery date after receipt of order (ARO) exceeds 30 days or is deemed to be critical to the success of the availability by the Maintenance Team Project Manager regardless of the lead time. This material will be ordered by the associated Planning Activity or RMC Logistics Department.

(2) PUSH: Repair or Alteration Material and Special Tools provided to a Ship's Maintenance Availability by a government entity (e.g. Ship's Force, TYCOM, NSWCs, NAVSUP WSS, NAVSEA) without any purchasing action required on the part of the Planning Activity or RMC Logistics Department.

(3) KITTED: Alteration Material procured and assembled into a kit through a separate Government contract and provided to a Ship's Maintenance Availability by an outside

activity (i.e. Program Office Class Planning Yard or PARM). Planning Activities may utilize the associated Program Office approved 4720/3 (Ship Alteration Material Summary) as a Work Item Reference for ShipAlt or AER kits.

Examples for each of the above categories:

TOTAL QUANTITY PROVIDED		NAME OF PART	PIECE NO.	REF. NO.	NATIONAL STOCK NO.	PARA NO.
5.1.1	1 EA	Valve		2._	3._	
5.2.1	1 EA	Pump		2._	3._	
5.3.1	1 KT	Kit for _____		2._	3._	

C. NUMBERING WORK ITEMS

1. For surface ships utilizing S9040-AC-IDX-010, Expanded Ship Work Breakdown Structure for All Ships & Ship/Combat Systems (ESWBS), the Work Item number must contain 8 digits. The first 5 digits must be assigned using the appropriate ESWBS number.

NOTE: In the case of alterations, the 4th and 5th digit must be as follows:

80 for title D ALTS and AERs
90 for title K ALTS
00 for ORDALTS

The 6th, 7th, and 8th digits must be for industrial control serialization, from 000 through 999. For example:

a. A repair Work Item on propulsion boilers for a ship with 2 propulsion shafts must be numbered 221-1X-XXX, where the first X is a 1 or 2 and the XXX is the industrial control serialization number.

b. A similar Work Item as (a) above, but accomplished on a D alteration, must be numbered 221-8X-XXX.

c. A similar Work Item as (a) and (b) above that is divided into many work oriented items must be numbered 221-XX-XXX, e.g., the 12th Work Item written on a propulsion boiler D alteration must be numbered 221-8X-012.

2. SI numbers must be assigned sequentially in the 009-XX series, such as 009-01, 009-09, ... 009-38. Local Standard Item numbers must also be sequentially numbered, but in series 099-XX followed by the individual RMC designator letter, i.e. 099-XXSE, for a SERMC LSI.

D. DEVELOPMENT USE OF TEMPLATES(MSWT/CSWT/SWT/LWT/BWST):

1. When the use of an MSWT is directed it must be employed verbatim to ensure full completion of Class Maintenance Plan (CMP) Mandatory Technical Requirements (MTRs), except as exempted in Paragraph 2 below. Whenever an applicable CSWT is available, it must be used verbatim except as exempted in Paragraph 2 below. In the absence of a CSWT, an applicable SWT must be used verbatim except as exempted in Paragraph 2 below. LWTs must not be used for coast wide solicitations. If a MSC Template does not exist for the Expanded Ship Work Breakdown Structure (ESWBS) being addressed by a tasked WN, previously executed Work Items for the same or similar work may be reviewed as a starting point. Once identified, the applicable portions of that Work Item must be transferred to a BWST. The planner will make intentional selections thoroughly reviewing the copied information, ensuring it conforms to required technical (NSI) and contractual (4E) standards. This BWST will then be submitted as a proposed MSC template to the Local Standards Coordinator for review.

2. Deviations from templates must not be permitted except in the following cases:

NOTE: THE ADDITION OF INSPECTIONS OR TESTS (CHECKPOITS) TO MASTER SPECIFICATION CATALOG TEMPLATES (E.G., MSWT, CSWT, SWT) THAT WILL GLOBALLY AFFECT THE TEMPLATES ARE NOT AUTHORIZED WITHOUT WRITTEN APPROVAL FROM THE SSRAC DIRECTOR. THESE CHANGES MUST BE SUBMITTED IN ACCORDANCE WITH THE MSC PROCESS FOR FINAL ADJUDICATION AND IMPLEMENTATION INTO FUTURE TEMPLATES.

a. Paragraphs in MSWTs that address Mandatory Technical Requirement(s) must not be edited beyond filling in the applicable blank spaces, nor must "Intentionally Left Blank" be used in place of reference(s) or requirement(s) as shown in Section VII-B. MSWTs do provide limited discretion for the editing of non-MTR paragraphs by adding or deleting REQUIREMENTS paragraphs to suit the authorized work.

b. CSWTs and SWTs may be edited by adding or deleting entire REQUIREMENTS paragraphs to suit the authorized work.

c. MSWTs, CSWTs and SWTs must be completed by filling in appropriate blanks with data to suit the technical requirements and the authorized work.

d. When designated as non-deviational and mandatory, or mandatory, the template must be used as specified in Section II.

3. The following procedure must be utilized in choosing a template:

a. Review the indices for basic subject matter.

b. If available, select the item that most closely approximates the subject work requirements.

c. Review to determine if the subject matter is the same as, or close enough to, the work requirement to allow its use.

4. The following procedure must be used in converting templates to Work Items:

a. Fill in the heading. File numbers and revision dates of templates must remain in converted Work Items.

b. Fill in the applicable portions of paragraph 1.

c. Verify that the appropriate references are available and current.

d. Review paragraph 2, REFERENCES, and add or delete references as required to suit any changes made in the REQUIREMENTS.

e. Review paragraph 3, REQUIREMENTS, and add or delete requirements and fill in the appropriate blanks with data, using standard phraseology of Annex B, to suit the authorized work.

f. Review paragraph 4, NOTES, and add or delete subparagraphs as appropriate.

g. Review paragraph 5, GOVERNMENT FURNISHED MATERIAL (GFM), and add or delete GFM to suit the authorized work.

NOTE: WHEN CONVERTING A TEMPLATE TO A WORK ITEM, NO ADDITIONAL INSPECTIONS OR TESTS (CHECKPOINTS) WILL BE ADDED THAT ARE NOT IN COMPLIANCE WITH 4E.

5. CSWTs must be written to accomplish class specific repairs and modernization. In the preparation of CSWTs the following guidelines must be used:

a. The CSWT must include work necessary to accomplish approved repairs and/or modernization of the equipment.

(1) Technical Repair Standards (TRSs) may be used as a reference by identification of the specific section(s) to be used. The Planner must ensure that the requirements are precise and do not invoke a string of possible additional work based on conditions identified.

(2) Calibration, repair, or renewal of gauges and other instrumentation must be required. Generally, instruments costing less than 50 Dollars each must be removed and new instruments installed.

(3) When not an interference, replacement with new insulation for disturbed, damaged, or missing insulation must be required.

(4) Inspection and painting of the foundations must be required.

(5) Preservation of the equipment must be required in accordance with Standard Item 009-32.

(6) Inspection of the alignment of piping to the equipment flanges must be required. Accomplishment of alignment by adjustment of the adjacent hanger is considered within the scope of the work. Refitting of pipe or flange and installation of new hangers must be handled as a contract change and treated as growth within scope for departure report and funding purposes. Note that alignment of steam piping frequently involves cold pull-up to align the system while in operation. Refer to the ship's plan for the cold pull-up data.

b. The CSWT must require disassembly of the equipment to the extent necessary to replace Planned Maintenance Material (listed in Appendix A of the TRS), and inspect sealing surfaces and pressure boundaries. Note that the TRS usually requires total disassembly of the unit. This may be unnecessary and, in fact, risky if shrink fits are involved and there is no indication of unsatisfactory fit or an obvious requirement to replace one of the parts (worn sleeve, cracked rotor, etc.). Likewise, Class 5 fit studs must not be removed from their setting unless necessary due to damaged threads or incorrect length. Replaced stud thread protrusion must be a minimum of one full thread and not more than 10 full threads beyond the nut face.

c. The CSWT must require a complete inspection of the disassembled unit in accordance with criteria in Appendix C of the TRS.

d. The CSWT must include the operational test of the equipment and must invoke the applicable portion of the approved test procedure, if one exists. The Ship's Force must be given responsibility for specific operational test prerequisites as well as for accomplishment of the operational test if within their capability and no contractor interface is involved. Specific test prerequisites that are the contractor's responsibility because of specific work must be specified in the CSWT.

e. Hydrostatic tests of pump or turbine casings must not be specified unless weld repairs have been accomplished.

f. The CSWT must require visual inspection of the entire pressure boundary and rotating parts, including a liquid penetrant inspection of a specific area (e.g., 200 square inches) and determination of wall thickness of a specific area (e.g., 100 square inches) by ultrasonic inspection. The specific areas must be described as eroded or corroded areas, high stress areas, such as inlet and discharge nozzles and areas in which visual inspection indicates an apparent crack. The TRS may require magnetic particle inspection of ferrous parts.

E. GENERAL REQUIREMENTS AND CRITERIA

1. Attachments must not be used as Work Item references. Attachments cannot establish requirements. Attachments should be used to improve Work Item clarity by identifying equipment or components to which requirements will be applied. Attachments to Master

Specification Catalog templates can assist with the performance of ship checks, validation of Configuration Management Data elements which require confirmation prior to use in a Work Item (e.g. location, item identification, valve number, etc.).

2. When attachments are used, the attachments must be identified, at the top of each page, centered in uppercase letters, by the word ATTACHMENT followed by a letter designation, such as ATTACHMENT A or ATTACHMENT B. Rarely will more than 3 attachments be utilized within any given Work Item. Each attachment will contain the Work Item number on each page and each page must be numbered. The total number of pages in the Attachment must be included in the total number of pages in the Work Item. For example, the footer of a one page attachment used in a 3-page Work Item would read Page 4 of 4.

3. Planning Memos may be used as Work Item references. As a reference, Planning Memos may establish requirements within Work Items. Planning Memos can be invoked such that a Contractor's compliance can be made to be directive, partially applicable, or informational for guidance only.

4. Activities developing or managing Planning Memos and Attachments must:

a. Set appropriate standards concerning the sources of authoritative data used as inputs (e.g. CDMD-OA, EOSS, CSOSS, NAVSEA Approved Drawings, etc.).

b. Ensure appropriate Command signature authority completes the final review, approval and signs out of issued document, with signatures recorded on the cover page, and that changes are noted on a revision record included with the document

c. Be responsible for the life-cycle management of documents, ensuring they are periodically reviewed (as a minimum biannually), revised, made available for use within an established data repository, and when appropriate cancelled.

d. Rapidly and consistently incorporate validated lessons learned and best practices.

e. Be responsive to customer questions concerning issued documents.

f. Assign unique identifiers to allow for the recording and life-cycle management of the document (naming rules will as a minimum allow for the recognition of the Planning Activity, the Ship Class or Classes being addressed and the Expanded Ships Work Breakdown Structure (ESWBS) of the system or components being addressed).

g. Document titles should provide clear understanding of the documents envisioned use.

5. Underscoring is limited to the heading, basic paragraph titles, and headings when listing repair parts or GFM as shown in Section VI.

6. Sub paragraphing is limited to 4 digits (example 3.1.1.1). Each subparagraph is limited to a single thought or work sequence.

7. Page numbering must be sequential in each Work Item and total pages indicated (e.g., 1 of 3, 2 of 3) in the lower center of the page. The item number must be indicated in the lower right corner of each page.

8. File numbers are assigned to templates for SUPSHIP/RMC reference purposes only. These numbers are located in the upper left section of page one. (Section VI refers)

9. The revision date of templates must be indicated in the upper left section of page one. (Section VI refers)

10. Work Items must be marked using NMD "OVERLAYS" when applicable. (Examples: LEVEL I, CRITICAL SYSTEM, DRYDOCK REQUIRED, COFFERDAM REQUIRED, GAS FREE CERTIFICATION REQUIRED)

a. Overlays must not be used on Work Items supporting work on non-nuclear surface ships, small boats and crafts, with the exception of "MASTER SPECIFICATION" overlays on MSWTs.

11. The numeral "1" must not be used but always be written as "one" or "One" as applicable. All numbers greater than one must be written as a numeral, i.e., 2, 3, 4, etc., except when the number is at the beginning of a sentence. This rule does not apply to references, or to GFM amount inserted under "TOTAL QUANTITY PROVIDED" listed in Paragraph 5.

F. COMMON WORK ITEM ERRORS. There is no substitute for good judgment and forethought on the part of the Work Item author. The task of writing definitive work requirements is complicated by the fact that no matter how technically correct the Work Item is, if the wording can be misunderstood or causes confusion, the Work Item is not a satisfactory contractual document. Paragraphs 1 through 6 list wording to be avoided in Work Item writing. These paragraphs attempt to highlight some of the mistakes commonly made in wording Work Items.

1. Ambiguous requirements. Ambiguities normally occur because of poor sentence structure and result in 2 or more interpretations of what is required. Contractors will invariably choose the least expensive interpretation. An example of an ambiguous requirement is: Install 12 storage bins (2ftx2ft) in the GSM (4-107-2) and dry provision (4-107-1) storerooms. Does this require a total of 12 or 24 bins?

2. Non-definitive requirements. Non-definitive requirements occur when accept or reject criteria is not included in the requirements. Some examples are:

a. Check bearing temperature and vibration.

b. Support new pipe with adequate hangers.

c. Prove gaskets and bolting satisfactory.

d. Close up as original.

Requirements for inspections and tests must include definitive accept or reject criteria required for contractor and SUPSHIP/RMC Quality Assurance evaluations.

3. Non-definitive phrases. Use of non-definitive phrases results in either non-definitive requirements or cancels the effect of stated requirements. Examples are:

a. As applicable

b. In accordance with latest requirements

c. Or other recognized methods

d. As practicable

e. As necessary

f. Or other suitable method

g. Check for proper values

4. Catch-all phrases. The tendency is to use catch-all phrases to cover unforeseen conditions or developments and thereby avoid a contract modification. In reality, use of these methods is more costly to the Government than an occasional contract modification because the contractor will include contingency money in his bid for catch-all phrases. Examples are:

a. Included, but not limited to

b. As required

c. Any and all or Each and every

d. When and where necessary

e. Etc.

5. Arbitrary statements. Statements that assign arbitrary authority to an activity or individual. Examples are:

a. Where directed by the Ship's Force

b. To the satisfaction of the SUPSHIP/RMC representative

c. In accordance with NAVSEA directives

d. As directed by the NAVSSES (NAVSEC) representative

6. Arbitrary Authority. The contractor is not required to meet the expectations of:

a. The on-scene surveyor

b. The Commanding Officer's representative

G. DO'S AND DON'TS

DO use clear, simple language, free of terms subject to variation in interpretation.

DO define unusual technical terms.

DO write for the understanding of those who will have to use your product.

DO give specific and sufficient requirements and directions so that the users will not be in doubt as to what is required.

DO make each Work Item as detailed as necessary to describe the work to be accomplished.

DO use "must" when the provision is mandatory; "may" when the action is discretionary (non-mandatory); "will" denotes a required action in the future; and "must not" when the action is prohibited.

DO make positive, concise statements that cannot be misinterpreted.

DO verify that reference documentation is available and applicable.

DO use attachments to improve clarity.

DO become familiar with available background and reference documentation before preparing Work Items. It will aid in drafting a good Work Item. Include only those essential references in the Work Item itself.

DO convey the information as if you did not understand who would do the job or where it would be done. Release a job only with the knowledge that it can be satisfactorily accomplished as you intended with no further communication.

DO describe in clear, concise, and complete language exactly what you expect the contractor to do. This is what you are willing to pay for and this, and only this, is what you can expect him to deliver.

DO use the phrase "as designated by the SUPERVISOR" when providing Front Loads (accomplishing a defined quantity of a specific task) or Level of Effort (LOE) Growth Reservations (providing a number of man-days and material dollars) to accomplish anticipated not clearly defined repairs.

DO use the phrase "when directed by the SUPERVISOR" if the start date for a Front Load statement (accomplishing a defined quantity of a specific task) or a Level of Effort (LOE) Growth Reservation statement (providing a number of man-days and material dollars) is not known."

DO use spellcheck on all Work Items.

DO use the word “Each” rather than use of a plural for (i.e., use “each label plate” vice “label plates”, “each surface” vice “surfaces”, and “each mating surface” vice “mating surfaces”)

DO document requirements only once within paragraph 3 of the Work Item by invoking Category II Standard Items, or by describing requirements to be accomplished in paragraph 3 of the Work Item.

DO use the word "EACH" rather than use of a plural form (i.e., use "each label plate" vice "label plates", "each surface" vice "surfaces", "each mating surface" vice "mating surfaces")

DON'T use colloquialisms.

DON'T use non-definitive statements such as "as required" or "as directed".

DON'T use statements that assign arbitrary authority to an activity or individual.

DON'T use catch-all phrases such as "as necessary", "excessive" or "as required".

DON'T use extraneous words like "thoroughly clean" or "extreme care is to be taken". Say "clean" (and indicate criterion/criteria).

DON'T use redundancy in an attempt to clarify or emphasize. Make each statement stand by itself.

DON'T put multiple thoughts in a single subparagraph. Keep each subparagraph short, concise and complete, expressing a single thought or requirement.

DON'T use such words as "proper" or "adequate" to signify a degree of acceptance. Include definitive acceptance or rejection criterion/criteria.

DON'T try to salvage a poor sentence or Work Item by indiscriminately jamming in words. Rewrite.

DON'T issue a Work Item with unresolved problems; you may be providing misguidance and misdirection.

DON'T use attachments or references to avoid writing requirements into the Work Item.

DON'T impose unrealistic requirements on the contractor. Exercise care in developing Work Items to ensure that requirements are always capable of being performed.

DON'T use symbols as abbreviations or to define dimensions (except when used in drawing titles). For example: % for percent, & for and, " for inch, ' for foot. Spell it out: 30 percent, and, One FT, 2 FT, 24 inches.

DON'T call it plate in one sentence and plating in other sentences or cable in one sentence and wire in other sentences. Say it the same way throughout the same Work Item. Be consistent.

DON'T use the numeral 1 alone except in numbering paragraphs, references, and GFM amount inserted under “TOTAL QUANTITY PROVIDED”. Write it out as "One" or "one" as applicable.

DON'T include anything in the Work Item that is not necessary to describe the desired product.

DON'T use test requirements such as 1-1/2 times the working pressure. Instead say test at 150 PSIG. Give definitive test criterion/criteria.

DON'T direct the contractor to provide and install ____. He is required to provide material not specifically listed as GOVERNMENT FURNISHED MATERIAL (GFM).

DON'T direct the contractor to "replace with material in kind" or "replace with material same as existing". The existing material could be the cause of the failure. Specify the material to be used.

DON'T write open and inspect type Work Items unless directed by the work request.

DON'T change the intent of the work request by writing more or less than what is called for.

DON'T use "quantity" descriptions in paragraph 3 when called out in paragraph 1.3.

DON'T list known sources of material/services unless you have verified a quote from the source.

DON’T duplicate the requirements of Standard Items to be accomplished in paragraph 3 of a Work Item.

DON'T put multiple thoughts in a single main paragraph or subparagraph. Keep each main paragraph and subparagraph short, concise and complete, expressing a single thought or requirement.

H. GLOSSARY OF SUITABLE TERMS

1. The following is a list of suitable terminology which will be used, and suitable terminology which will not be used.

SUITABLE	NOT SUITABLE
Accomplish the requirements	Accomplish the work ... or Comply with
Accomplish an operational test)	Conduct ... or Perform (Conduct may be used for
Remove	Drain
Remove existing and install	Replace ... or Unship new
Disconnect	Unbolt
Preserve	Paint
Inspect	Check
Fabricate	Make
Measure	Take
Must be	Is to be or shall be
(Specify a Quantity)	All
Verify	Demonstrate ... Prove
Ensure	Assure ... or Insure
Identified	Found
Through	Thru
5,000 dollars	5000 dollars ... or $5000
1,000	1000

Assemble	Re-Assemble
Assembly	Re-Assembly
Install Installation	Re-Install Re-Installation

ANNEX A

TO

APPENDIX 4-E

OF

CHAPTER 4 TO

VOLUME VII

JOINT FLEET MAINTENANCE MANUAL (JFMM)

1. INVOKING GUIDE

a. Category I SIs: A determination must be made as to which of these are applicable to a specific Job Order. The applicable SIs are invoked for a specific Job Order by inclusion in the IFB/RFP Schedule and listed in the index of Work Items which is included in each specification package.

ITEM NO.	TITLE	USAGE/COMMENTS
009-01	General Criteria; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-02	Environmental Compliance Report for Material Usage; accomplish	Invoke when work is being accomplished where environmental compliance requirements are not specified locally. Not applicable to boats and craft 65 feet and less in length.
009-03	Toxic and Hazardous Substance control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-04	Quality Management System; provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-06	Maintaining Protection and Cleanliness from Non-Radioactive Operations; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-07	Confined Space Entry, Certification, Fire Prevention and Housekeeping; accomplish	Invoke for all solicitations on manned vessels. Not applicable to boats and craft 65 feet and less in length.
009-08	Shipboard Fire Protection; accomplish	Invoke for all solicitations on manned vessels. Not applicable to boats and craft 65 feet and less in length.
009-10	Asbestos-Containing Material (ACM); control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-18	Mine Warfare Ships Magnetic Material; control	Invoke for all Minesweeping Ships and Craft
009-19	Provisioning Technical Documentation (PTD); provide	Invoke when hull, mechanical, electrical/electronic equipment or components are being furnished by the contractor. Not applicable to boats and craft 65 feet and less in length.
009-20	Government Property; control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-21	Logistics and Technical Data; provide	Invoke when equipment is being installed new or replaces existing equipment or when equipment is being permanently removed from ship. Not applicable to boats and craft 65 feet and less in length.

ITEM NO.	TITLE	USAGE/COMMENTS
009-23	Interference; remove and install	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-24	Authorization, Control, Isolation, Blanking, Tagging, and Cleanliness; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-34	Fire Protection of Unmanned Vessel at Contractor Facility; accomplish	Invoke when work is being accomplished on unmanned vessels at Contractor's facility. Not applicable to boats and craft 65 feet and less in length.
009-39	Technical Manual Contract Requirement (TMCR) for a New Technical Manual for Commercial Equipment/Component; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-40	Requirements for Contractor Cranes, Multi-Purpose Machine and Material Handling Equipment at a Naval Facility; provide	Invoke when work is being accomplished at a Naval facility. Not applicable to boats and craft 65 feet and less in length.
009-60	***Schedule and Associated Reports for CNO Availabilities ; provide and manage***	***Invoke for CNO Availabilities.*** Not applicable to boats and craft 65 feet and less in length.
009-61	Shipboard Use of Fluorocarbons; control	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-67	Integrated Total Ship Testing; manage	Invoke for all CNO availabilities. Not applicable to boats and craft 65 feet and less in length.
009-69	Heavy Weather/Mooring Plan; provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-70	Confined Space Entry, Certification, Fire Protection, Fire Prevention and Housekeeping for Unmanned Vessel; accomplish	Invoke when work is being accomplished on unmanned vessels. Not applicable to boats and craft 65 feet and less in length.
009-72	Physical Security at a Private Contractor Facility; accomplish	Invoke when work is being accomplished at contractor's facility. Not applicable to boats and craft 65 feet and less in length.
009-73	Shipboard Electrical/ Electronic Cable Procedure; accomplish	Invoke for all solicitations requiring electrical work. Not applicable to boats and craft 65 feet and less in length.

ITEM NO.	TITLE	USAGE/COMMENTS
009-74	Occupational, Safety and Health Plan; accomplish	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-80	Ship Facilities; maintain	Invoke for availabilities when ship's crew remains onboard. Not applicable to boats and craft 65 feet and less in length.
009-81	Compartment Closeout; accomplish	Invoke for CNO scheduled availabilities and non-CNO scheduled availabilities greater than or equal to 9 weeks in length, when a formal compartment closeout schedule is not otherwise implemented. Not applicable to boats and craft 65 feet and less in length.
009-82	Installation of Equal Component Vice Specified Component; report	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-84	Threaded Fastener Requirements; Accomplish	Invoke for all solicitations involving fasteners. Not applicable to boats and craft 65 feet and less in length.
009-93	Emergency Planning and Community Right-to-Know Act (EPCRA) and Pollution Prevention Act (PPA) Information; provide	Invoke when work is being accomplished where EPCRA/PPA reporting requirements are not specified locally. Not applicable to boats and craft 65 feet and less in length.
009-99	Ship Departure Report; provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-100	Ship's Stability; maintain	Invoke for all solicitations for CG-47 and DDG-51 Class ships.
009-101	Ship Transit and Berthing; accomplish	Invoke when work is being accomplished at the contractor's facility (for ships over 100 feet in length).
009-106	Work Authorization Form Coordinator (WAFCOR); provide	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-109	Non-SUBSAFE Work on SUBSAFE-Certified Vessel; accomplish	Invoke for all SUBSAFE certified vessels.
009-110	Non-Nuclear Work on a Nuclear Vessel; accomplish	Invoke for all work on nuclear vessels.
009-111	***Schedule and Associated Reports for non-CNO Availabilities; provide and manage***	***Invoke for non-CNO Availabilities.*** Not applicable to boats and craft 65 feet and less in length.
009-117	Combat Systems Light-Off; support	Invoke for solicitations requiring a Combat Systems Light-Off.

ITEM NO.	TITLE	USAGE/COMMENTS
009-118	CG Deck Loading; accomplish	Invoke for all solicitations for CG-47 Class ships.
009-120	Fact Finding and Critique of Unplanned Event; manage	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-122	Temporary Padeye; install and remove	Invoke for all solicitations. Not applicable to boats and craft 65 feet and less in length.
009-125	Boats and Craft less than 65ft long; Accomplish	Invoke on boats and craft 65 feet and less in length.

ANNEX B

TO

APPENDIX 4-E

OF

CHAPTER 4 TO

VOLUME VII

JOINT FLEET MAINTENANCE MANUAL (JFMM)

ANNEX B

NAVSEA STANDARD PHRASEOLOGY

1. Discussion. The standard phraseology herein is promulgated as NAVSEA Standard Phraseology. Each user activity must utilize this standard phraseology to ensure reliable and consistent reproduction of the wording contained herein. An efficient way to ensure this goal is to store new phraseology in a permanent memory form such as on computer systems media or other means. When a phrase is required it will be reproduced from the stored memory. This reproduction will ultimately save considerable labor in the production process and will immediately improve accuracy and reduce the need for extensive proofreading of Work Items.

2. Changes. Additions, deletions, or modifications to this standard phraseology must be made by submitting the recommended change to the SSRAC for consideration at the annual meeting. The following basic guidelines must be applied when evaluating new proposed phrases.

A. Phrases must be applicable for all user activities and, therefore, must not be limited to a particular class of ship. However, when phrases do apply to a particular class of ship, it must be noted (e.g., G15).

B. Phrases must be limited to a minimum number of sentences. Phrases containing numerous sentences will be referred for consideration as a template.

C. The sentence structure must be grammatically applicable for singular and plural situations. To achieve this, the word "each" must be utilized in lieu of having to pluralize words within the phrase every time repairing, replacing, removing, installing, testing, etc., of more than one unit needs to be addressed.

D. Each phrase must express a complete thought, in clear, concise language which is contractually sound as required by Appendix 4-E, Section VII, paragraph B-4(f). Conciseness is a key area of concern.

E. Sentence structure of phrases must be verb, noun format as required by Appendix 4-E, Section VII, paragraph B-4(e).

F. Each phrase must identify compliance requirements as required by Appendix 4-E, Section VII, paragraph B-4(e).

G. Ambiguous wording must not be used as indicated in Appendix 4-E, Section VII, paragraph B-4(f).

H. Do not refer to the word "paragraph" when referring to another part of the Work Item (except for Attachments). For example:

"3._ Remove the equipment listed in 1.3."

I. All references to NAVSEA or NAVSUP drawings or technical manuals must start with the drawing or technical manual number and omit the word NAVSEA or NAVSUP. The above will facilitate the recall of a numerical listing of references by drawing/technical manual number. For example:

S9086-T8-STM-010/CH-593/Rev 7, Pollution Control

J. Minimize the number of blanks contained within phrases which must be filled in by the planner/surveyor.

3. Organization. The standard phraseology presented below is organized into 7 sections and, with the exception of Section C, each phrase within each section is assigned a unique identification number. The 7 sections are identified by the letter designation of the section, followed by a unique number. The 7 sections are as follows:

A. Standard phraseology for invoking Category II Standard Items, for use in various disciplines. Use of this section is mandatory.

B. Standard phrases for general use in various disciplines.

C. Not used (incorporated in Appendix 4-E).

D. Standard phrases for use in structural disciplines.

E. Standard phrases for use in mechanical disciplines.

F. Standard phrases for use in electronic and electrical disciplines.

G. Standard phrases for use in the piping disciplines.

4. Instructions. Guidance instructions are also provided where appropriate. The guidance instructions and notes are listed first, then the phrase and the phrase number. If any guidance instructions or notes are applicable to the blanks, these will appear before the phrase. Standard phrases, which cannot stand alone or phrases where optional uses are permitted will generally contain a note. The phrases herein, which include the words "using 2._ for guidance." must be deleted when guidance is not available. The words "in accordance with 2._" must be substituted when 2._ requirements are mandatory.

STANDARD PHRASEOLOGY

SECTION A

1. This section of standard phraseology contains the approved standard phrases to be used when invoking Category II Standard Items. The Standard Item number and title are provided at the top of each phrase or group of phrases associated with the Standard Item list.

SI

009-05 TEMPORARY ACCESS; ACCOMPLISH

Note: USE 009-12 PHRASEOLOGY IF WELDING, FABRICATION, OR INSPECTION FOR INSTALLATION OF A TEMPORARY ACCESS IS REQUIRED FOR THIS WORK ITEM.
USE 009-25 PHRASEOLOGY IF A STRUCTURAL BOUNDARY TEST (e.g., COFFERDAM, VACCUM BOX, AIR HOSE, WATER HOSE) IS REQUIRED FOR THIS WORKITEM.

Accomplish the requirements of 009-05 of 2.1 for ___.

A5a

Accomplish the requirements of 009-05 of 2.1.

A5b

009-09 PROCESS CONTROL PROCEDURE (PCP); PROVIDE AND ACCOMPLISH
Accomplish the requirements of 009-09 of 2.1 for ___.

A9

009-11 INSULATION AND LAGGING; ACCOMPLISH

NOTE: NOT TO BE USED FOR INTERFERENCE REPLACEMENTS COVERED BY 009-23. USE A-11a TO INSTALL NEW PIPING, MACHINERY, AND HULL INSULATION AND LAGGING. CONSIDERATION MUST BE GIVEN TO HIGH TRAFFIC AREAS AS DEFINED IN 3.16 OF MIL-STD-769.
USE 009-12 PHRASEOLOGY IF WELDING, OF NEW FASTENERS IS REQUIRED FOR THIS WORK ITEM
USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR INSTALLATION OF NEW INSULATION, LAGGING, AND REUSABLE COVERS ARE REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-11 of 2.1 for ___.

A11a

Accomplish the requirements of 009-11 of 2.1.

A11b

009-12 WELD, FABRICATE, AND INSPECT; ACCOMPLISH

NOTE: A12b MUST BE A SUBPARAGRAPH OF A12a IF MORE THAN A VISUAL INSPECTION IS REQUIRED.
USE 009-09 PHRASEOLOGY IF A PROCESS CONTROL PROCEDURE (PCP) FOR SPECIFIC WELDING, BRAZING, AND INSPECTION OPERATIONS IS REQUIRERED FOR THIS WORK ITEM.

Accomplish the requirements of 009-12 of 2.1, including Table __, Column(s) __, Lines One through __.

A12a

NOTE: A12b MAY BE USED AS A SUBPARAGRAPH TO A12a AND A12c. THIS PHRASE CANNOT BE USED TO SPECIFY NDT REQUIREMENTS NOT ASSOCIATED WITH WELDING OR BRAZING. SEE B25 AND B26.

Accomplish nondestructive testing in accordance with Line __.

A12b

Accomplish the requirements of 009-12 of 2.1, including Table __, Column(s) __, Lines One through __, for ___.

A12c

009-13 Meter, Gauge, Switch, and Thermometer; repair

NOTE: USE B50 AS A SUBPARAGRAPH TO A13a.

Accomplish the requirements of 009-13 of 2.1 for each ___ listed in ___, using 2._ for guidance.

A13a

Calibrate and adjust each new ____ in accordance with 009-13 of 2.1.

A13b

NOTE: FOR USE WITH A13a AND A13b WHEN LIGHT-OFF ASSESSMENT (LOA)/PROPULSION EXAMINATION BOARD (PEB) RELATED.

Ensure calibration is accomplished within ___ days preceding the scheduled LOA lock-out date.

A13c

009-15 ROTATING MACHINERY; BALANCE

Accomplish the requirements of 009-15 of 2.1 for each rotating assembly.

A15

009-16 ELECTRONIC EQUIPMENT; REPAIR

NOTE: INSERT EQUIPMENT TECHNICAL MANUAL IN REFERENCES.
USE B50 AS A SUBPARAGRAPH TO A16.

Accomplish the requirements of 009-16 of 2.1 for the ___ listed in ___, using 2._ for guidance.

A16

009-17 ROTATING ELECTRICAL EQUIPMENT; REPAIR

NOTE: INSERT EQUIPMENT TECHNICAL MANUAL IN REFERENCES.
USE 009-15 PHRASEOLOGY IF BALANCING OF THE ROTATING ASSEMBLY FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

USE 009-58 PHRASEOLOGY IF SHAFT ALIGNMENT FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-17 of 2.1 for the equipment listed in 1.3._, using 2._ for guidance.

A17

009-25 STRUCTURAL BOUNDARY TEST; ACCOMPLISH

Accomplish the requirements of 009-25 of 2.1 for a running air test of ___. Allowable leakage: None.

A25a

NOTE: USE A25b FOR TANKS, VOIDS, AND COFFERDAMS. THE ALLOWABLE DROP OUNCES PER SQUARE INCH FOR WIRING TRUNK AND OTHER SPACES ARE 5 AND 2 RESPECTIVELY.

Accomplish the requirements of 009-25 of 2.1 for a completion air test of ___. Test pressure must be __ PSIG. Maintain test pressure for 15 minutes for temperature stabilization prior to start of test. Hold test pressure for 10 minutes. Allowable drop in pressure: None.

A25b

NOTE: SALT WATER MUST BE SPECIFIED FOR USE ON WOOD.

Accomplish the requirements of 009-25 of 2.1 for a ___ hose test of ___. Allowable leakage: None.

A25c

Accomplish the requirements of 009-25 of 2.1 for a vacuum box test of ___. Allowable leakage: None.

A25d

Accomplish the requirements of 009-25 of 2.1 for an air hose, water hose, or vacuum box test of ____. Allowable leakage: None.

A25e

Accomplish the requirements of 009-25 of 2.1 for a chalk test of each structural closure repaired in ___.

A25f

009-26 DECK COVERING; ACCOMPLISH

NOTE: IDENTIFY CORRECT ATTACHMENT ACCORDING TO TYPE OF DECK COVERING INVOLVED.

USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR DECK COVERING IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-26 of 2.1, including Attachment __.

A26a

Accomplish the requirements of 009-26 of 2.1, including Attachment __, for installation of ___, in each location listed in ___.

A26b

Accomplish the requirements of 009-26 of 2.1 for ___.

A26c

009-27 MATERIAL IDENTIFICATION AND CONTROL (MIC) FOR LEVEL I SYSTEM; ACCOMPLISH

NOTE: USE 009-09 PHRASEOLOGY IF A PROCESS CONTROL PROCEDURE (PCP) FOR LEVEL I WORK IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-27 of 2.1.

A27

009-30 BOILER SAMPLE TUBE; INSPECT

Accomplish the requirements of 009-30 of 2.1.

A30

009-31 BOILER WATERJET CLEANING; ACCOMPLISH

Accomplish the requirements of 009-31 of 2.1.

A31

009-32 CLEANING AND PAINTING REQUIREMENTS; ACCOMPLISH

NOTE: USE A32a WHEN MAIN ITEM IS PRESERVATION AND THE TABLES IN 009-32 PROVIDE A CHOICE. USE A32b FOR OTHER PRIMARY PRESERVATION WORK AND TOUCH-UP. SPECIFY DEGREE OF PRESERVATION, i.e., FOUNDATION, NEW AND DISTURBED SURFACES.
USE 009-26 PHRASEOLOGY IF A SLIP RESISTANT DECK

COVERING IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-32 of 2.1, including Table __, Line(s) __, for ___.

A32a

Accomplish the requirements of 009-32 of 2.1 for ___.

A32b

Accomplish the requirements of 009-32 of 2.1, including Table __, Line(s) __, Column(s) __, for ___.

A32c

Accomplish the requirements of 009-32 of 2.1 for each new and disturbed surface.

A32d

009-33 ROTATING ELECTRICAL EQUIPMENT; REWIND

NOTE: INSERT EQUIPMENT TECHNICAL MANUAL IN REFERENCES.
USE 009-15 PHRASEOLOGY IF BALANCING OF THE ROTATING ASSEMBLY FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.
USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

USE 009-58 PHRASEOLOGY IF SHAFT ALIGNMENT FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

USE 009-113 PHRASEOLOGY IF WORK ON WINDINGS FOR A SEALED INSULATION SYSTEM (SIS) IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-33 of 2.1 for equipment listed in 1.3._, using 2. _ for guidance.

A33

009-36 CONTROLLER; REPAIR

NOTE: INSERT EQUIPMENT TECHNICAL MANUAL IN REFERENCES.
USE B50 AS A SUBPARAGRAPH TO A36.

USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR A CONTROLLER IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-36 of 2.1 for each controller listed in ___, using 2. _ for guidance.

A36

009-37 GENERAL PROCEDURE FOR WOODWORK; ACCOMPLISH

NOTE: INVOKE IN WORK ITEMS REQUIRING WOOD REPAIRS/NEW INSTALLATIONS.
USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR BULKHEAD SHEATHING SANDED SURFACES IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-37 of 2.1 for ___.

A37a

NOTE: A37b MUST BE USED ONLY AS A SUBPARAGRAPH TO A37a. INVOKE A37b WHEN ACCOMPLISHING REPAIRS/NEW INSTALLATIONS OF DECK PLANK CAULKING SEAMS.

Ensure caulking compound for each deck plank seam is _____.

A37b

009-38 BOILER , CATAPULT ACCUMULATOR, AND REBOILER DRY LAY-UP; ACCOMPLISH

Accomplish the requirements of 009-38 of 2.1 for ___.

A38

NOTE: FOR STANDARD ITEMS 009-45, 009-46, 009-47, 009-48, 009-50, 009-52, 009-53, 009-55, AND 009-96, VALVE REMOVAL AND INSTALLATION MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

009-45 TAPERED PLUG VALVE; REPAIR

NOTE: A45b AND A45c MUST BE SUBPARAGRAPHS TO A45a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

Accomplish the requirements of 009-45 of 2.1 for each plug valve listed in ___, using 2._ for guidance.

A45a

Ensure the seat tightness test pressure is __ PSIG.

A45b

Ensure the test medium is ___.

A45c

009-46 BUTTERFLY VALVE, SYNTHETIC AND METAL SEATED; REPAIR

NOTE: A46b AND A46c MUST BE SUBPARAGRAPHS TO A46a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

Accomplish the requirements of 009-46 of 2.1 for each butterfly valve listed in ___, using 2._ for guidance.

A46a

Ensure the seat tightness test pressure is __ PSIG.

A46b

Ensure the test medium is __.

A46c

009-47 GATE VALVE; REPAIR

NOTE: A47b AND A47c MUST BE SUBPARAGRAPHS TO A47a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM. MUST NOT BE USED FOR HIGH PRESSURE STEAM VALVES.

Accomplish the requirements of 009-47 of 2.1 for each gate valve listed in ___, using 2._ for guidance.

A47a

Ensure the seat tightness test pressure is __ PSIG.

A47b

Ensure the test medium is ___.

A47c

009-48 PRESSURE SEAL BONNET VALVE SHOP REPAIR; ACCOMPLISH

NOTE: A48b AND A48c MUST BE SUBPARAGRAPHS TO A48a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

Accomplish the requirements of 009-48 of 2.1 for each pressure seal bonnet valve listed in ___, using 2._ for guidance.

A48a

Ensure the seat tightness test pressure is __ PSIG.

A48b

Ensure the test medium is ___.

A48c

009-49 PRESSURE SEAL BONNET VALVE IN-LINE REPAIR; ACCOMPLISH

NOTE: FOR IN-LINE REPAIR.

OPERATIONAL TEST OF THE VALVE MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

Accomplish the requirements of 009-49 of 2.1 for each in-line pressure seal bonnet valve listed in ___, using 2._ for guidance.

A49

009-50 HORIZONTAL SWING CHECK VALVE; REPAIR

NOTE: A50b MUST BE A SUBPARAGRAPH TO A50a.
FOR SHOP REPAIR AND TEST.
TEST MEDIUM FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM.
MUST NOT BE USED FOR SCUPPER VALVES.

Accomplish the requirements of 009-50 of 2.1 for each check valve listed in ___, using 2._ for guidance.

A50a

Ensure the test medium is ___.

A50b

009-52 RELIEF VALVE; REPAIR

NOTE: A52b-A52d MUST BE SUBPARAGRAPHS TO A52a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS AND VALVE LIFTING MUST BE SPECIFIED IN THE INVOKING WORK ITEM.
MUST NOT BE USED FOR BOILER SAFETY VALVES OR BALANCED DESIGN RELIEF VALVES.

Accomplish the requirements of 009-52 of 2.1 for each relief valve listed in ___, using 2._ for guidance.

A52a

Ensure the test medium is ___.

A52b

Ensure the seat tightness test pressure is __ PSIG.

A52c

Ensure the lifting pressure is __ PSIG.

A52d

009-53 Bolted Bonnet, Globe, Globe Angle, and Globe Stop Check Valve Shop Repair; accomplish

NOTE: A53b AND A53c MUST BE SUBPARAGRAPHS TO A53a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

Accomplish the requirements of 009-53 of 2.1 for each bolted bonnet steam valve listed in ___, using 2._ for guidance.

A53a

Ensure the seat tightness test pressure is __ PSIG.

A53b

Ensure the test medium is ___.

A53c

009-54 Bolted Bonnet, Globe, Globe Angle, and Globe Stop Check Valve In-line Repair; accomplish

NOTE: FOR IN-LINE REPAIR.

OPERATIONAL TEST OF THE VALVE, INCLUDING BYPASS VALVE, MUST BE SPECIFIED IN WORK ITEM.

Accomplish the requirements of 009-54 of 2.1 for each in-line bolted bonnet steam valve listed in ___, using 2._ for guidance.

A54

009-55 REGULATING/REDUCING VALVE; REPAIR

NOTE: A55b-A55c MUST BE SUBPARAGRAPHS TO A55a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR VALVE INLET AND REGULATED PRESSURE/TEMPERATURE MUST BE SPECIFIED IN THE INVOKING WORK ITEM.
A55a-A55c MUST BE USED FOR PRESSURE REGULATORS/REDUCERS ONLY.

Accomplish the requirements of 009-55 of 2.1 for each pressure regulating/reducing valve listed in ___, using 2._ for guidance.

A55a

Ensure the inlet/regulating or reducing pressure is __ PSIG to __ PSIG.

A55b

Ensure the test medium is ___.

A55c

NOTE: A55e-A55f MUST BE SUBPARAGRAPHS TO A55d.

A55d-A55f MUST BE USED FOR TEMPERATURE REGULATORS ONLY.

Accomplish the requirements of 009-55 of 2.1 for each temperature regulating/reducing valve listed in ___, using 2._ for guidance.

A55d

Ensure the regulated temperature is __ degrees Fahrenheit.

A55e

Ensure the test medium is ___.

A55f

009-56 MAIN PROPULSION BOILER WET LAY-UP; ACCOMPLISH

Accomplish the requirements of 009-56 of 2.1 for ___.

A56

009-57 REDUCTION GEAR SECURITY; ACCOMPLISH

NOTE: A57 TO BE INVOKED AS 3.1 IN WORK ITEMS WHERE REDUCTION GEAR SECURITY IS AFFECTED.
USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR NEW AND DISTURBED SURFACES IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-57 of 2.1.

A57

009-58 PUMP AND DRIVER SHAFT ALIGNMENT; ACCOMPLISH

NOTE: A58 TO BE INVOKED ANY TIME THE ROTOR OF A PUMP OR DRIVER (MOTOR/TURBINE) IS DISTURBED FOR REPAIR OR REPLACEMENT.

Accomplish the requirements of 009-58 of 2.1 for ___.

A58

009-62 BOILER HANDHOLE AND MANHOLE SEAT AND PLATE; INSPECT

Accomplish the requirements of 009-62 of 2.1 for ___.

A62

009-63 LUBRICATING OIL AND HYDRAULIC FLUID; ANALYZE

NOTE: A63b MUST BE A SUBPARAGRAPH TO A63a.

SPECIFY QUANTITY AND TYPE OF SAMPLE.

Accomplish the requirements of 009-63 of 2.1.

A63a

Test and analyze each ___ sample.

A63b

NOTE: A63c WILL BE A SUBPARAGRAPH TO A63a-A63b, AS APPLICABLE.
SPECIFY THE LOCATION FROM WHICH SAMPLES OF LUBRICATING OR HYDRAULIC FLUIDS ARE TO BE TAKEN.

Obtain a sample from ___ in accordance with ASTM D 4057.

A63c

009-65 POLYCHLORINATED BIPHENYLS (PCBs); CONTROL

NOTE: USE 009-65 PHRASEOLOGY WHEN PCB CONTAINED MATERIAL IS IDENTIFIED OR SUSPECTED IN DRAWING/TECHNICAL MANUAL OR BY SHIP-CHECK.
USE 009-65 PHRASEOLOGY WHEN PCB CONTAINED MATERIAL IS IDENTIFIED OR SUSPECTED IN DRAWING/TECHNICAL MANUAL OR BY SHIP-CHECK.

Accomplish the requirements of 009-65 of 2.1 for ___.
A65a

Accomplish the requirements of 009-65 of 2.1.

A65b

009-71 PIPING SYSTEM; TEST

NOTE: INVOKE A71a FOR NON-PRESSURIZED SYSTEMS ONLY.

Accomplish the requirements of 009-71 of 2.1 for new and disturbed piping.

A71a

NOTE: A71b-A71e ARE FOR USE WHERE THE OPERATING PRESSURE TEST IS ALLOWED BY NSTM CH-505. TEST PRESSURE AND TEST MEDIUM MUST BE LISTED.

Accomplish the requirements of 009-71 of 2.1 for new and disturbed piping system.

A71b

Ensure operating test pressure is __ PSIG, using ___in accordance with_____.

A71c

NOTE: A71d-A71e ARE FOR USE IN FEEDWATER AND ELECTRONIC COOLING WATER PIPING SYSTEMS WHERE CONDUCTIVITY LEVELS REQUIRE MONITORING.

Accomplish the requirements of 009-71 of 2.1 for new and disturbed piping system.

A71d

NOTE: FOR REFERENCE USE S9086-GX-STM-020/CH-220, BOILER WATER/FEEDWATER TEST AND TREATMENT.

Ensure hydrostatic test pressure is ___ PSIG, using feedwater conforming to Paragraphs 220-22.18 or 220-22.20, and 220-22.21 and 220-22.22 of 2._.

A71e

NOTE: A71h-A71j ARE FOR USE WHERE THE HYDROSTATIC TEST IS REQUIRED BY NSTM CH-505. TEST MEDIUM AND SYSTEM IDENTIFICATION MUST BE LISTED.

Accomplish the requirements of 009-71 of 2.1 for hydrostatic test, using clean, fresh water at ___ PSIG, for each new and disturbed ___ piping systems.

A71h

Accomplish the requirements of 009-71 of 2.1 for hydrostatic test, using feedwater at __ PSIG, for each new and disturbed ___ piping systems.

A71i

NOTE: FOR REFERENCE USE S9086-GX-STM-020/CH-220, BOILER WATER/FEEDWATER TEST AND TREATMENT.

Feedwater must conform to Paragraphs 220-22.18 or 220-22.20, and 220-22.21 and 220-22.22 of 2._.

A71j

NOTE: USE A71l FOR AIR TEST OF PIPING SYSTEMS WHERE WATER WOULD BE DETRIMENTAL.

Accomplish the requirements of 009-71 of 2.1 for each new and disturbed ____ piping systems, using clean, dry air or nitrogen at __ PSIG.

A71l

NOTE: FOR USE WITH VCHT SYSTEMS (PORTIONS UNDER VACUUM).

Accomplish the requirements of 009-71 of 2.1 for a visual tightness test of the Vacuum, Collection, Holding and Transfer (VCHT) Sewage System to at least 24 inches of Hg (vacuum) for at least 10 minutes, with less than 10 percent drop.

A71m

NOTE: FOR STRENGTH, POROSITY AND MECHANICAL JOINT TIGHTNESS TESTS OF HYDRAULIC AND LUBRICATING OIL SYSTEMS.

Accomplish the requirements of 009-71 of 2.1 for ___ test, using system fluid at __ PSIG, for each new and disturbed ___ piping systems.

A71n

009-75 CIRCUIT BREAKER; REPAIR

NOTE: INSERT EQUIPMENT TECHNICAL MANUAL IN REFERENCES.
USE B50 AS A SUBPARAGRAPH TO A75.

Accomplish the requirements of 009-75 of 2.1 for ___, using 2._ for guidance.

A75

009-76 WAVEGUIDE AND RIDGID COAXIAL LAY-UP; ACCOMPLISH

Accomplish the requirements of 009-76 of 2.1 for ___.

A76

009-77 COFFERDAM INSTALLATION; ACCOMPLISH

NOTE: A PROCESS CONTROL PROCEDURE (PCP) IS REQUIRED FOR COFFERDAM INSTALLATION;009-09 PHRASEOLOGY MUST BE INCLUDED FOR THIS WORK ITEM.

Accomplish the requirements of 009-77 of 2.1 for ___.

A77a

Accomplish the requirements of 009-77 of 2.1.

A77b

009-78 PASSIVE COUNTERMEASURES SYSTEM (PCMS) MATERIAL; REPAIR

NOTE: USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR NEW AND DISTURBED SURFACES IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-78 of 2.1.

A78

009-79 GOVERNMENT OWNED MATERIAL(GOM) STATUS FOR MULTI-SHIP MULTI-OPTION AVAILABILITIES; REPORT

NOTE: INVOKE FOR MULTI-SHIP MULTI-OPTION AVAILABILITIES FOR GOVERNMENT OWNED MATERIAL (GOM)STATUS REPORTS.

Accomplish the requirements of 009-79 of 2.1 for ___.

A79a

Accomplish the requirements of 009-79 of 2.1.

A79b

009-83 WIRE ROPE ASSEMBLY; FABRICATE

NOTE: INVOKE FOR AVAILABILITIES WHEN WIRE ROPE RIGGING IS REPAIRED/ALTERED.

USE 009-09 PHRASEOLOGY IF A PROCESS CONTROL PROCEDURE (PCP) FOR FABRICATION OF WIRE ROPE ASSEMBLIES IS REQUIRED FOR THIS WORK ITEM

Accomplish the requirements of 009-83 of 2.1 for ___.

A83a

Accomplish the requirements of 009-83 of 2.1.

A83b

009-85 GOVERNMENT SPONSORED PLANNING YARD/CONFIGURATION DATA MANAGER (CDM) ON-SITE REPRESENTATIVE FACILITY; PROVIDE

Accomplish the requirements of 009-85 of 2.1.

A85

009-86 RECOVERY AND TURN-IN OF OZONE DEPLETING SUBSTANCE (ODS); ACCOMPLISH

NOTE: INVOKE WHEN WORKING ON FLUOROCARBON OR HALON-CONTAINING SYSTEM.

Accomplish the requirements of 009-86 of 2.1 for ___.

A86a

Accomplish the requirements of 009-86 of 2.1.

A86b

009-87 CHEMICAL DISINFECTION PROCEDURE; ACCOMPLISH

NOTE: INVOKE WHEN WORKING ON POTABLE WATER SYSTEMS.

Accomplish the requirements of 009-87 of 2.1 for ___.

A87a

Accomplish the requirements of 009-87 of 2.1.

A87b

009-88 COLLECTION, HOLDING AND TRANSFER (CHT) AND MOTOR GASOLINE (MOGAS) TANKS, SPACES, AND PIPING, INCLUDING SEWAGE OR (MOGAS) – CONTAMINATED TANKS, SPACES, AND PIPING; CERTIFY

NOTE: A PROCESS CONTROL PROCEDURE (PCP) IS REQUIRERED TO SUPPORT A STEP BY STEP PROCEDURE OF HOW THE CERTIFICATION PROCESS WILL BE ACCOMPLISHED;009-09 PHRASEOLOGY MUST BE INCLUDED FOR THIS WORK ITEM.

Accomplish the requirements of 009-88 of 2.1 for ___.

A88a

Accomplish the requirements of 009-88 of 2.1.

A88b

009-89 CONTRACTOR FURNISHED ANODE(PURCHASE AND INSPECTION); ACCOMPLISH

NOTE: INVOKE WHEN PURCHASING OR INSPECTING ANODE.

Accomplish the requirements of 009-89 of 2.1 for ___.

A89a

Accomplish the requirements of 009-89 of 2.1.

A89b

009-90 TECHNICAL REPRESENTATIVE; PROVIDE

NOTE: GENERALLY TECHNICAL SUPPORT MUST BE PROVIDED BY THE SUPERVISOR. THE TECHNICAL REPRESENTATIVE MUST ONLY BE REQUESTED WHEN:

1. TECHNICAL DOCUMENTATION IS NOT AVAILABLE TO THE SUPERVISOR (i.e., SUPERVISOR DOES NOT HAVE THE PROPRIETARY DATA).

2. THE SUPERVISOR DOES NOT HAVE SUFFICIENT PERSONNEL TO SUPPORT OVERSIGHT OF MAINTENANCE BEING PERFORMED.

3. SPECIAL TOOLS OR EQUIPMENT ARE REQUIRED.

4. THE SUPERVISOR DOES NOT HAVE PERSONNEL WITH THE KNOWLEDGE OR EXPERTISE TO SUPPORT THE MAINTENANCE BEING PERFORMED.

5. PLANNER MUST IDENTIFY WHAT SERVICES THE TECHNICAL REPRESENTATIVE IS TO PROVIDE (I.E., TECHNICAL DOCUMENTATION, OVERSIGHT OF MAINTENANCE SUPPORT, SPECIAL TOOLS AND/OR EQUIPMENT).

Accomplish the requirements of 009-90 of 2.1 for ___.

A90

009-91 PROPELLER IN-PLACE INSPECTION; ACCOMPLISH

Accomplish the requirements of 009-91 of 2.1 for equipment listed in ___.

A91

009-92 RESILIENT MOUNT; INSTALL

NOTE: INSERT EQUIPMENT TECHNICAL MANUAL.
USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR DISTURBED SURFACES IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-92 of 2.1 for equipment listed in ___, using 2._ for guidance.

A92

009-95 MECHANICALLY ATTACHED FITTING (MAFs); INSTALL

NOTE: INVOKE WHEN REPAIRS/ALTERATIONS ARE DONE ON PIPING SYSTEM.

Accomplish the requirements of 009-95 of 2.1 for ___.

A95a

Accomplish the requirements of 009-95 of 2.1.

A95b

009-96 BALL VALVE; REPAIR

NOTE: A96b AND A96c MUST BE SUBPARAGRAPHS TO A96a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS MUST BE SPECIFIED IN THE INVOKING WORK ITEM.

Accomplish the requirements of 009-96 of 2.1 for each ball valve listed in ___, using 2._ for guidance.

A96a

Ensure the seat tightness test pressure is __ PSIG.

A96b

Ensure the test medium is ___.

A96c

009-103 WEIGHT AND MOMENT CHANGE DATA; PROVIDE

NOTE: INVOKE WHEN
1. A REFERENCED DWG DENOTES A PERMANENT CHANGE WHEN REMOVAL, ADDITION OR SHIFTING OF WEIGHT ONE POUND OR > THAT WILL CAUSE A STABILITY AND TRIM ISSUE.
2. THE WORK INVOLVES PERMANENT REMOVAL, ADDITION OR SHIFTING OF WEIGHT ONE POUND OR > (INCLUDES BUT NOT LIMITED TO, STRUCTURAL MEMBERS, PLATING, EQUIPMENT, SYSTEMS, PIPING, DECK

COVERINGS, ACTIONS BY ALTERATION INSTALLATION TEAMS).
3. THE AMOUNT OF WEIGHT ONE POUND OR > REMOVALS, ADDITIONS OR SHIFTS WHICH WILL CAUSE A STABILITY AND TRIM ISSUE CAN BE SIGNIFICANTLY DIFFERENT FOR DIFFERENT CLASSES OF NAVY BATTLE FORCE SHIPS AND OTHER NAVY BOATS OR CRAFT.
4. TEMPORARY WEIGHTS (E.G. STAGING, SCAFFOLDING, ENCLOSURES, DECK COVERING, CONTAINMENTS, OFFLOADING/ON-LOADING FLUIDS) ARE COVERED BY NSI 009-100 FOR MAINTAINING PROPER LIST.

Accomplish the requirements of 009-103 of 2.1 for ___.

A103a

Accomplish the requirements of 009-103 of 2.1.

A103b

009-104 VIBRATION TESTING AND ANALYSIS; ACCOMPLISH

Accomplish the requirements of 009-104 of 2.1.

A104

009-105 THERMAL SPRAYED COATING FOR MACHINERY COMPONENT REPAIR; ACCOMPLISH

NOTE: USE WHEN THERMAL SPRAY COATING (EXCEPT ALUMINUM) MACHINERY COMPONENTS. SPECIFY THE TYPE OF COATING MATERIAL AND EITHER WIRE SPRAY OR POWDER SPRAY PROCESS.
USE 009-27 PHRASEOLOGY IF MATERIAL IDENTIFICATION AND CONTROL (MIC) IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-105 of 2.1 for the ___ listed in 1._. The coating material must be ___, using the ___ spray process.

A105

009-107 PIPING SYSTEM CLEANLINESS RESTORATION AND FLUSING (NON-NUCLEAR); ACCOMPLISH

NOTE: THIS STANDARD MUST BE USED WHEN PIPING SYSTEM CLEANLINESS IS LOST. WHEN PRACTICAL, SHIPBOARD CLEANING MUST BE MINIMIZED OR ELIMINATED BY COMPONENT AND SUBASSEMBLY CLEANING AFTER FABRICATION AND BEFORE

INSTALLATION ABOARD SHIP. PLANNER MUST IDENTIFY WHICH PIPING SYSTEM REQUIRES CLEANING.

USE 009-09 PHRASEOLOGY IF A PROCESS CONTROL PROCEDURE (PCP) IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-107 of 2.1 for cleaning and flushing ___.

A107a

NOTE: A107b MUST BE A SUBPARAGRAPH TO A107a. PLANNER MUST SPECIFY CLEANLINESS LEVEL II OR LEVEL III AS IDENTIFIED IN SECTION 505j2. OF GSO FOR PIPING SYSTEM BEING CLEANED.

Ensure General Cleaning must be Level __.

A107b

009-112 Prevention of Radiographic-Inspection Ionizing-Radiation Hazard; accomplish

NOTE: INVOKE FOR AVAILABILITIES WHEN WORK INVOLVES RADIOGRAPHIC INSPECTION.

Accomplish the requirements of 009-112 of 2.1 for ___.

A112a

Accomplish the requirements of 009-112 of 2.1.

A112b

009-113 ROTATING ELECTRICAL EQUIPMENT WITH A SEALED INSULATION SYSTEM (SIS); REWIND

NOTE: USE 009-15 PHRASEOLOGY IF BALANCING OF THE ROTATING ASSEMBLY FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

USE 009-32 PHRASEOLOGY IF CLEANING AND PAINTING FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

USE 009-58 PHRASEOLOGY IF SHAFT ALIGNMENT FOR ROTATING ELECTRICAL EQUIPMENT IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-113 of 2.1 for the equipment listed in 1.3._, using 2._ for guidance.

A113

009-114 MOLD REMEDIATION; ACCOMPLISH

Accomplish the requirements of 009-114 of 2.1.

A114

009-115 BEARING REBABBITTING; ACCOMPLISH

NOTE: USE 009-09 PHRASEOLOGY IF A PROCESS CONTROL PROCEDURE (PCP) FOR REBABBITTING EACH BEARING IS REQUIRED FOR THIS WORK ITEM.

Accomplish the requirements of 009-115 of 2.1 for each bearing listed in ___.

A115

009-116 WASTE HEAT BOILER SODIUM NITRATE WET LAYUP; ACCOMPLISH

Accomplish the requirements of 009-116 of 2.1 for ___.

A116

009-121 SHIP ASSESSMENT/INSPECTION; ACCOMPLISH

NOTE: SUPPORT MUST BE PROVIDED BY THE SUPERVISOR. THE TECHNICAL REPRESENTATIVE MUST ONLY BE REQUESTED WHEN:

1. TECHNICAL DOCUMENTATION IS NOT AVAILABLE TO THE SUPERVISIOR (i.e. SUPERVISOR DOES NOT HAVE THE PROPRIETARY DATA).
2. THE SUPERVISIOR DOES NOT HAVE SUFFICIENT PERSONNEL TO SUPPORT OVERSIGHT OF THE ASSESSMENT/INSPECTION.
3. SPECIAL TOOLS OR EQUIPMENT ARE REQUIRED.
4. THE SUPERVISOR DOES NOT HAVE PERSONNEL WITH THE KNOWLEDGE OR EXPERTISE TO SUPPORT THE ASSESSMENT/INSPECTION.
5.

Accomplish the requirements of 009-121 of 2.1 for ___.

A121a

Accomplish the requirements of 009-121 of 2.1.

A121b

009-123 FIBER OPTIC COMPONENT; REMOVE, RELOCATE, REPAIR, AND INSTALL

Accomplish the requirements of 009-123 of 2.1 for ____.

A123

009-124 THERMAL SPRAY NONSKID APPLICATION; ACCOMPLISH

Accomplish the requirements of 009-124 of 2.1 for ____.

A124a

Accomplish the requirements of 009-124 of 2.1.

A124b

Accomplish the requirements of 009-124 of 2.1, including Table __, Line(s) __, for _____.

A124c

Accomplish the requirements of 009-124 of 2.1, including Table __, Line(s) __, Column(s) __, for _____.

A124d

STANDARD PHRASEOLOGY

SECTION B

1. This section of standard phraseology is for general use in all disciplines.

NOTE: MUST BE USED WHEN THE EXCEPTIONS LISTED IN 3.1 OF 009-23 ARE TO BE REMOVED/INSTALLED AS INTERFERENCES.

Remove and install each___ as interferences where required.

B2

Accomplish a static load test of the ___. A test load of __ pounds must be applied for 10 minutes. Remove the test load and inspect ___ and surrounding structure for evidence of damage or permanent deformation. Allowable damage: None.

B3

B4 Systems and Specifications, SSPC Painting Manual, Volume 2

NOTE: USE B4 FOR REFERENCE FOR PHRASES B5a-B5h.

SOLVENT CLEANING SPECIFICATION COVERS THE PROCEDURE REQUIRED FOR THE REMOVAL OF OIL, GREASE, DIRT, SOIL, SALTS, AND CONTAMINANTS BY CLEANING WITH SOLVENT, VAPOR, ALKALI, EMULSION, OR STEAM.

Solvent clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 1 of 2._.

B5a

NOTE: HAND TOOL CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF LOOSE RUST, LOOSE MILL SCALE, AND LOOSE PAINT BY HAND CHIPPING, HAND SCRAPING, HAND SANDING, HAND BRUSHING, OR BY A COMBINATION OF THESE METHODS.

Hand tool clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 2 of 2._.

B5b

NOTE: POWER TOOL CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF LOOSE RUST, LOOSE MILL SCALE, AND LOOSE PAINT WITH POWER WIRE BRUSHES, POWER IMPACT TOOLS, POWER GRINDERS, POWER SANDERS OR BY A COMBINATION OF THESE METHODS.

Power tool clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 3 of 2._.

B5c

NOTE: WHITE BLAST CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF MILL SCALE, RUST, RUST SCALE, PAINT, AND FOREIGN MATTER BY THE USE OF ABRASIVES PROPELLED THROUGH NOZZLES OR BY CENTRIFUGAL WHEELS.

White blast clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 5 of 2._.

B5d

NOTE: COMMERCIAL BLAST CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF MILL SCALE, RUST, RUST SCALE, PAINT, AND FOREIGN MATTER BY THE USE OF ABRASIVES PROPELLED THROUGH NOZZLES OR BY CENTRIFUGAL WHEELS TO THE EXTENT THAT TWO-THIRDS OF EACH SQUARE INCH OF SURFACE AREA MUST BE FREE OF VISIBLE RESIDUES AND THE REMAINDER MUST BE LIMITED TO LIGHT DISCOLORATION, SLIGHT STAINING OR TIGHT RESIDUES.

Commercial blast clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 6 of 2._.

B5e

NOTE: BRUSH-OFF BLAST CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF LOOSE MILL SCALE, LOOSE RUST, AND LOOSE PAINT OR COATINGS BY THE USE OF ABRASIVES PROPELLED THROUGH NOZZLES OR BY CENTRIFUGAL WHEELS TO THE EXTENT THAT TIGHT

MILL SCALE, TIGHTLY ADHERED RUST, TIGHTLY ADHERED PAINT, AND TIGHTLY ADHERED COATINGS ARE PERMITTED TO REMAIN.

Brush-off blast clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 7 of 2._.

B5f

NOTE: NEAR-WHITE BLAST CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF MILL SCALE, RUST, CORROSION PRODUCTS, OXIDES, PAINT, OR OTHER FOREIGN MATTER BY THE USE OF ABRASIVES PROPELLED THROUGH NOZZLES OR BY CENTRIFUGAL WHEELS TO THE EXTENT AT LEAST 95 PERCENT OF EACH SQUARE INCH OF SURFACE AREA MUST BE FREE OF VISIBLE RESIDUES AND THE REMAINDER MUST BE LIMITED TO VERY LIGHT SHADOWS, VERY SLIGHT STREAKS, OR SLIGHT DISCOLORATIONS CAUSED BY RUST STAIN, MILL SCALE OXIDES, OR SLIGHT, TIGHT RESIDUES OF PAINT OR COATING THAT MAY REMAIN.

Near-white blast clean ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 10 of 2._.

B5g

NOTE: POWER TOOL CLEANING SPECIFICATION COVERS THE PROCEDURE AND DEGREE OF CLEANLINESS REQUIRED FOR THE REMOVAL OF RUST, MILL SCALE, PAINT, AND FOREIGN MATTER WITH POWER WIRE BRUSHES, POWER IMPACT TOOLS, POWER GRINDERS, POWER SANDERS, OR BY A COMBINATION OF THESE METHODS.

Power tool clean to bare metal ___. Accomplish each requirement of Surface Preparation Specification SSPC-SP 11 of 2.__.

B5h

Clean each exposed part free of ___, leaving no residue or injurious effects.

B6

Install each new label plate in accordance with 2._, using 2._ for guidance.
B13a

Ensure each label plate conforms to MIL-DTL-15024, Type ___, Material___,
Color ___, and Size ___.
B13b

NOTE: PLANNER IS REQUIRED TO RESEARCH AND PROVIDE PERTINENT DATA IN NOTES SECTION OF WORK ITEM.

Reference 2._ is available from ___. For a copy of this reference, contact ___.

B14

Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of ___ to the SUPERVISOR.

B15a

NOTE: USE B15b WHEN REPORT IS REQUIRED BY A CERTAIN DATE FOR EFFECTIVE AVAILABILITY MANAGEMENT.

Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of ___ to the SUPERVISOR within ___ days of ___.

B15b

Submit one legible copy, in hard copy or approved transferrable media, of a report listing ___ to the SUPERVISOR.

B15c

Submit one legible copy, in hard copy or approved transferrable media, of completed ___ to the SUPERVISOR.

B15d

Submit one legible copy, in hard copy or approved transferrable media, of completed 2._ for each ___ and a report listing results of the requirements of 3._ to the SUPERVISOR.

B15e

NOTE: USE B15f WHEN A WORK ITEM REQUIRES THE SUBMISSION OF A REPORT, AND THE WORK HAS TO BE COMPLETED AND THE DATA IN THE HANDS OF THE NSA FOR REVIEW AND APPROVAL PRIOR TO THE UNDOCKING OF THE VESSEL.

Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of ___ to the SUPERVISOR within one day after recording the data but no later than 96 hours prior to undocking.

B15f

NOTE: B17b MUST BE A SUBPARAGRAPH TO B17a.

FOR PACKING, CRATING, AND SHIPPING OF PROPULSION EQUIPMENT, EITHER TURNAROUND OR REPLACEMENT, USE MIL-DTL-2845, PROPULSION SYSTEMS, BOAT AND SHIP; MAIN SHAFTING, PROPELLERS, BEARINGS, GAUGES, SPECIAL TOOLS, AND ASSOCIATED REPAIR PARTS; PRESERVATION, PACKAGING, PACKING AND STORAGE OF, AS A REFERENCE.

Crate and secure ___ removed in 3._. Packaging must conform to 2._.

B17a

Ship crated material prepaid to and from: ___.

B17b

NOTE: B17d MUST BE A SUBPARAGRAPH TO B17c.

ON EQUIPMENT WHICH IS (GFM) APA MATERIAL, EITHER TURNAROUND OR REPLACEMENT, USE SL460-AA-HBK-010, HANDBOOK FOR INSPECTION, PACKAGING, HANDLING, STORAGE AND TRANSPORTATION AS A REFERENCE WHEN B17c IS INVOKED, FOR PACKING, CRATING, AND SHIPPING OF EQUIPMENT.

Crate and secure ___ removed in 3._. Packaging must conform to 2._.

B17c

Ship crated material prepaid to and from: ___.

B17d

Visually inspect the removed equipment for general condition and completeness before packing and crating.

B17e

Ship the equipment to ensure arrival at the repair facility within __ days after availability start date.

B17f

Submit one legible copy, in hard copy or approved transferrable media, of the shipping document to the SUPERVISOR.

B17g

NOTE: B20b MUST BE A SUBPARAGRAPH TO B20a.

ON EQUIPMENT WHICH IS NOT APA OR TURNAROUND, USE NAVSUP PUB. 484, PACKAGING PROCEDURES, AS A REFERENCE WHEN B20a IS INVOKED, FOR PACKING, CRATING, AND SHIPPING OF EQUIPMENT THAT HAS A KNOWN NAVY VALUE.

Crate and secure ___ removed in 3._. Packaging must conform to 2._.
B20a

Ship crated material to:

B20b

NOTE: B20d MUST BE A SUBPARAGRAPH TO B20c.

ASTM D 6039/D 6039M APPLIES ONLY TO OPEN WOOD CRATES FOR LOADS NOT EXCEEDING 4000 LBS.

Crate and secure ___ removed in 3._, conforming to ASTM D 6039/D 6039M.

B20c

Ship crated material to ___.

B20d

Ship the equipment within __ days after the availability start date.

B20f

NOTE: USE B20g FOR MATERIAL TO BE TURNED OVER TO THE SUPERVISOR.

Crate and secure the equipment listed in 1.3. Packing must be equal to that used for the equipment provided by the Government. Crated equipment must be turned in to the SUPERVISOR within 10 days after removal.
B20g

Crate and ship ___ prepaid to and from the following ___ for ___:

B20i

NOTE: USE WHEN MAIN ITEM IS REMOVAL OF INSULATION AND LAGGING.
FOR REFERENCE USE S9086-VH-STM-010/CH-635, THERMAL, FIRE,AND ACOUSTIC INSULATION.

Remove and dispose of existing insulation and lagging from each system and component listed in 1.3._, using 2._ for guidance.

B21

NOTE: B15a MUST BE A SUBPARAGRAPH TO B22.

Accomplish a joint visual inspection with the SUPERVISOR of each ___ listed in ____ for structural integrity, deterioration, pitting, each crack, and each area of damage and/or distortion, and to determine each required repair.

B22

NOTE: B25b MUST BE A SUBPARAGRAPH TO B25a.

USE B25a-B25b FOR ULTRASONIC OR RADIOGRAPHIC TESTS. FOR REFERENCE USE T9074-AS-GIB-010/271, REQUIREMENTS FOR NONDESTRUCTIVE TESTING METHODS.

Accomplish each ___ test on ___ in accordance with 2._.

B25a

Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of 3._ to the SUPERVISOR.

B25b

NOTE: B26b MUST BE A SUBPARAGRAPH TO B26a.

USE B26a-B26b FOR LIQUID PENETRANT OR MAGNETIC PARTICLE TESTS. FOR REFERENCE USE T9074-AS-GIB-010/271, REQUIREMENTS FOR NONDESTRUCTIVE TESTING METHODS AND MIL-STD-2035, NONDESTRUCTIVE TESTING ACCEPTANCE CRITERIA.

Accomplish each___ test on ___ in accordance with 2._. The accept or reject criteria must be in accordance with Class ___ of 2._.

B26a

Submit one legible copy, in hard copy or approved transferrable media, of a report listing results of the requirements of 3._ to the SUPERVISOR.

B26b

Remove and dispose of ___ from the ___.

B27

Remove existing and install new ___.

B28

NOTE: B30 WILL BE USED WHEN LISTING MULTIPLE REPAIR PARTS, SUCH AS THOSE IDENTIFIED IN DRAWINGS AND TECHNICAL MANUALS. B30 WILL NOT BE USED WHEN LISTING RAW MATERIAL.

Remove existing, fit, and install new the following parts:

TOTAL QUANTITY REQUIRED	NAME OF PART	PIECE NO.	REF. NO.	FIGURE/ DRAWING NO.	PART NO.

B30

Energize with ship's power and accomplish operational testing of the equipment installed in 3. to ensure equipment functions to designed sequence of operation, in accordance with each manufacturer's instruction supplied with equipment.

B33

Accomplish an operational test of ___ in accordance with 2._.

B34a

Accomplish the requirements of 2._ for each ___.

B34b

NOTE: B34d MUST BE A SUBPARAGRAPH TO B34c.

Accomplish an operational test of the new equipment installed in 3._ through each phase of operation for __ continuous hours, using each manufacturer's instruction for guidance, and the following:

B34c

Verify conformance and operations capabilities in accordance with manufacturer's specifications.

B34d

NOTE: THIS SEGMENT MUST ALWAYS BE USED ON PROGRAMMED TURNAROUND WORK ITEMS. CALENDAR DAYS ARE DERIVED BY COMPARISON BETWEEN EQUIPMENT TURNAROUND SCHEDULE AND ROH DATE SET BY TYCOM.

Ensure the estimated dockside delivery date of the ___ is __ days after start of availability.

B36

Accomplish the requirements of 2._.

B37a

NOTE: PHRASE B37b IS INTENDED FOR, BUT NOT LIMITED TO, USE WHEN ACCOMPLISHING SHIPALTS.

Accomplish the requirements of 2._ through 2._, using 2._ for guidance.

B37b

NOTE: AN (I), (V), (Q), (IG), (VG), OR (QG) IS REQUIRED FOR TESTING REQUIREMENTS.

Accomplish the requirements of Test Note ___ of 2._.

B37c

Remove equipment listed in 1.3, using 2._ for guidance.

B38a

Remove equipment listed in 1.3 in accordance with 2._.

B38b

Remove equipment listed in 1.3._ through 1.3._, using 2._ for guidance.

B38c

Remove equipment listed in 1.3._ through 1.3._ in accordance with 2._.

B38d

Remove equipment listed in 1.3._, using 2._ for guidance.

B38e

Remove equipment listed in 1.3._ in accordance with 2._.

B38f

Install equipment listed in 1.3._ in accordance with 2._.

B38g

Remove and dispose of each system fluid from the equipment listed in ___.

B39

Obtain the services of a ___ engineer to provide engineering assistance to ___.

B40

Scrape and spot-in each sealing surface to obtain a 360-degree continuous ___ percent evenly distributed contact with no leakage path extending from the pressure boundary to the atmospheric boundary.

B41

NOTE: B44b-B44d MUST BE SUBPARAGRAPHS TO B44a.
FOR REFERENCE USE S6430-AE-TED-010, VOLUME I, TECHNICAL DIRECTIVE FOR PIPING DEVICES, FLEXIBLE HOSE ASSEMBLIES

Remove each existing and install new flexible hose assembly. Template from each existing shipboard conditions.
B44a

NOTE: AN (I)(G) IS REQUIRED FOR TESTING FLEX HOSES.

Ensure each new hose assembly is in accordance with 2._.

B44b

Accomplish the requirements of Chapter ____ of 2.__.

B44c

Install a new CRES identification tag on each flexible hose assembly engraved in accordance with Chapter___of 2.__.

B44d

Install each new hose assembly in accordance with Chapter ___ of 2.___.

B44e

NOTE: B44g MUST BE A SUBPARAGRAPH TO B44f.

USE WHEN NEW FITTINGS ARE UNAVAILABLE.

Use each existing flexible hose end fitting where identified acceptable after inspection in accordance with 2.__.

B44f

Submit one legible copy, in hard copy or approved transferrable media, of a report listing the identification tag test data for each hose assembly tested to the SUPERVISOR.

B44g

NOTE: FOR REFERENCE, USE 803-1385866, PENETRATION BULKHEAD AND DECK.

Install each new bulkhead and deck sleeve in accordance with 2._.

B45

NOTE: DOLLAR AMOUNTS MUST BE WRITTEN WITH COMMA, e.g., 5,000.

Provide ___ mandays of labor and ___ dollars of material to accomplish work not previously identified in the Work Item, as directed by the SUPERVISOR. If the total costs are less than the authorized manday and dollar amounts, remaining funds will be subject to recoupment. The contractor is not authorized to exceed these limits.
B48a

NOTE: USE FOR GAS FREE CERTIFICATIONS OF ADJACENT TANKS OR SPACES OR PIPING SYSTEMS WHEN LOCATION OF REQUIRED HOT WORK CANNOT BE DETERMINED UNTIL COMPLETION OF PRELIMINARY AIR TEST AND VISUAL INSPECTION. DO NOT USE IF ADJACENT TANKS OR SPACES OR PIPING SYSTEMS ARE IDENTIFIED IN 1.2.

Provide ___ mandays of labor and ___ dollars of material to accomplish certifications ("Safe for Workers" and/or "Safe for Hot Work") of adjacent tanks, spaces, and piping systems when directed by the SUPERVISOR. If the total costs are less than the authorized manday and dollar amounts, remaining funds will be subject to recoupment. The contractor is not authorized to exceed these limits."

B48b

Install each flush insert in way of each removal, using new material of same type and thickness as each adjacent structure.

B49

NOTE: B50a AND B50b IS INTENDED FOR, BUT NOT LIMITED TO, USE AS A SUBPARAGRAPH TO A13a, A16, A36, AND A75.

Provide ___dollars of material for the cost of new parts, as directed by the SUPERVISOR. If the total costs are less than the authorized dollar amount, remaining funds will be subject to recoupment. The contractor is not authorized to exceed these limits."

B50a

Submit one legible copy, in hard copy or approved transferrable media, of a list of new parts installed, excluding parts specifically listed to be removed in this Work Item or invoked Standard Item, in place of those identified to be missing or defective, with documenting invoices or other substantiating data, to the SUPERVISOR.

B50b

Accomplish additional repair to each tank located in 1.2, using the unused balance of each tank repair listed in ___ through ___ when authorized by the SUPERVISOR.

B51

NOTE: FILL IN NUMBER OF TIMES CLIN IS NEEDED. USE B52a FOR EQUIPMENT. USE B52b WHEN LOCATION AND IDENTIFICATION ARE BOTH NEEDED.

Accomplish the requirements of Contract Line Item Number (CLIN) __ (__ EA) for the equipment listed in 1.3_.

B52a

Accomplish the requirements of Contract Line Item Number (CLIN) __ (_ EA) for the ___ listed in 1.3._, and located in 1.2._.

B52b

Accomplish the requirements of Contract Line Item Number (CLIN) __ (_ EA) for ____.

B52c

Accomplish the requirements of Contract Line Item Number (CLIN) __ (_ EA).

B52d

NOTE: FOR SURFMEPP USE, PROVIDE ENGINEERING DATA TO UPDATE REQUIRED CMP TASK RECORDS.

Submit one legible copy, in hard copy or approved transferrable media, of a report listing each result of each requirement of ___ to the SURFMEPP Systems Engineer listed in ___ via the SUPERVISOR.

B53a

SURFMEPP Systems Engineering address:

B53b

SURFMEPP Systems Engineering C230
Norfolk Naval Ship Yard, Building M-22
Portsmouth, VA 23709-5000
(757) 967-3454
Email: SURFMEPP.systemsengineering@navy.mil

B53c

STANDARD PHRASEOLOGY

SECTION C

NOT USED

STANDARD PHRASEOLOGY

SECTION D

1. This section of standard phraseology is for use in structural disciplines.

Chip and grind each surface flush in way of each repair.

D1a

Chip and grind each surface flush in way of _____.

D1b

Remove existing and install new each watertight door and hatch listed in ___.

D2

Clean each tank listed in ___ free of debris and foreign matter.

D3a

Inspect each tank for cleanliness prior to final closing.

D3b

Phrase deleted (See A25f)

D4

Remove existing and install new each watertight hatch and coaming listed in ___.

D5

NOTE: UTILIZE FOR COMPARTMENTATION MARKINGS. FOR REFERENCE USE SAE-AMS-STD-595, COLORS.

Apply each marking using each applicable color from the following list:

White, Color No. 17886 of 2.__, MIL-PRF-24635
Brilliant Yellow, Color of 2.__, MIL-PRF-24635
Red, Color No. 11105 of 2.__, MIL-PRF-24635
Green, Color No. 14062 of 2.__, MIL-PRF-24635

Black, Color No. 17038 of 2.__, MIL-PRF-24635
Blue, Color No. 15200 of 2.__, MIL-PRF-24635

D8

Slush each new wire rope with new grease conforming to MIL-PRF-18458.

D10

Contact the SUPERVISOR to determine color, style, and pattern of each habitability item.

D11a

Provide each sample for color, style, and pattern selection.

D11b

Apply 2 layers of insulation tape, to a total minimum thickness of 17 mils, conforming to MIL-I-24391 to each faying surface of dissimilar metal.

D12

Remove each unused clip, hanger, electrical button, and stud from overhead, deck and each bulkhead.

D13

Adjust each hinge, latch, and safety release, installing CRES shims to ensure an airtight seal for each door.

D14

Accomplish a visual inspection of each ___ listed in 1.3._ for structural integrity, deterioration, pitting, each crack, and each area of damage or distortion located in 1.2.__.

D16a

Accomplish a visual inspection of each tank located in 1.2 for existing preservation coating, structural integrity, deterioration, pitting, each crack, and each area of damage or distortion, including each sounding tube, tank vent, overflow, piping, structural member, and manhole cover.

D16b

Shop test each new wire rope, including each attached end fitting, to 40 percent of the breaking strength of the wire rope.

D17

Remove existing and install each new decorative sheathing system on each inside boundary bulkhead in accordance with 2._, and details in 2._, conforming to MIL-L-24518.

D18

Install each temporary wooden closure over each opening caused by each removal.

D21a

Remove each temporary closure upon completion of work.

D21b

Adjust each dogging mechanism for unobstructed operation and to obtain 100 percent centered contact with the imprint of chalk in the center three-fifths of the gasket.

D23

Vee-out and weld ___ linear feet of each deteriorated and damaged weld. Each area of repair must include deck, bulkhead, shell plating, and overhead of each space located in 1.2 for total of linear feet per space.

D24

Preserve each interior surface of each ___ with rust preventative compound conforming to MIL-PRF-16173, Class I or II, Grade 1 or 3, by completely filling and draining. Ventilate to remove solvent vapor.

D25

NOTE: FOR REFERENCE USE MIL-STD-1689, FABRICATION, WELDING, AND INSPECTION OF SHIPS STRUCTURE.

Fair-in existing plating adjoining each new insert in accordance with 2._.

D26

Ensure each change and each alternate route is made to enable each ventilation run to be completed and to suit each existing shipboard condition when the dimensions used on 2._ cannot be complied with.

D30a

NOTE: D30b IS OPTIONAL FOR THOSE ACTIVITIES WHO CAN ESTABLISH THAT THE CONTRACTOR CAN SHIPCHECK THE SHIP BEING REPAIRED PRIOR TO BID.

Relocate each light, fixture, equipment, pipe, cable, and wire in way of new ventilation installation. New ventilation must be template to suit each existing shipboard condition and offset around each interference not feasible to relocate.

D30b

NOTE: D31a IS INTENDED FOR, BUT NOT LIMITED TO, USE WHEN ACCOMPLISHING SHIPALTS.

NOTE: FOR REFERENCE USE 512-7624117, INSTRUCTIONS FOR VENTILATION TESTING AND BALANCING.

Accomplish testing and balancing for each system installed new, and modified and disturbed portion of each existing system, to ensure minimum delivery of designed air quantities in accordance with 2._.

D31a

Template exact size, configuration, and location from each existing shipboard condition.

D32

Accomplish a total of ___EA G67 sample in way of plating being removed as designated by the SUPERVISOR. Turnover each prepared sample to the SUPERVISOR for testing.

D33

STANDARD PHRASEOLOGY

SECTION E

1. This section of standard phraseology is for general use in mechanical disciplines.

Disassemble each ___, using 2._ for guidance.

E1a

Disassemble each ___ in accordance with 2._.

E1b

Protect, blank, wrap, cover, or mask equipment and each opening to preclude damage and prevent entry of contaminants into each gas turbine engine to include each foreign object debris (FOD) screen, uptake space, engine room, machinery, equipment, valve, vent system, and opening prior to cleaning operation. |

E2

NOTE: USE AS A SUBPARAGRAPH WHEN DISASSEMBLY IS INVOKED.

Measure and record each serial number, size, and clearance, of each ___, using 2._ for guidance.

E4a

Measure and record each serial number, size, and clearance, of each __ in accordance with 2._.

E4b

NOTE: USE FOR NONCRITICAL EQUIPMENT (GENERAL USE).

Include each size, clearance, fit and finish for each wearing part, bearing surface, thrust and journal bearing, seal and packing area, and physical condition of each part not specified for renewal.

E4c

NOTE: USE FOR MISSION CRITICAL EQUIPMENT, ESPECIALLY FORCED DRAFT BLOWERS, MAIN FEED PUMPS, MAIN PROPULSION TURBINES, ETC.

Include each size, clearance, fit, and finish for each wearing part, bearing surface, thrust and journal bearing, seal and packing area, and physical condition of each part not specified for renewal.
E4d

NOTE: USE E5a AS A SUBPARAGRAPH WHEN DISASSEMBLY IS INVOKED.

Inspect each part for wear and defects, in accordance with 2._.

E5a

Inspect each part for wear and defects, using 2._ for guidance.

E5b

Remove test fluid and dry the ___ interior and exterior surfaces. Allowable residual fluid: None.

E6

Straighten each ___ to within __ inch total indicator reading.

E7

Straighten each shaft to within __ inch total indicator reading.

E8

Straighten each operating lever, linkage, and eccentric to provide freedom of operation.

E9

NOTE: FOR REFERENCE USE DOD-STD-2182, ENGINEERING CHROMIUM PLATING (ELECTRODEPOSITED) FOR REPAIR OF SHAFTING (METRIC). FOR NDT TESTING, USE B26a-B26b.

Chrome-plate each ___ journal in accordance with 2._.

E10

Machine each ___, using 2._ for guidance.

E11a

Machine each ___ in accordance with 2._.

E11b

Machine each new undersize casing wearing ring and each new oversize impeller wearing ring to size specified in 2._.

E12a

NOTE: USE E12b-E12c FOR IMPELLERS WITHOUT WEARING RINGS.

Machine each new impeller wearing ring area concentric to the impeller bore within 0.001-inch total indicator reading, removing only material required to correct each out-of-round and eccentric condition.

E12b

Machine each new undersize casing wearing ring bore concentric to each casing wearing ring area to size specified in 2._ for each mating impeller wearing surface.

E12c

NOTE: USE E12d-E12e FOR IMPELLERS WITH OVERSIZED WEARING RINGS.

Machine each new impeller wearing ring concentric to the impeller bore within 0.001 inch total indicator reading, removing only material required to correct each out-of-round and eccentric condition.

E12d

Machine each new casing wearing ring bore concentric to each casing wearing ring area to size specified in 2._ for each mating impeller wearing ring surface.

E12e

Machine each new impeller wearing ring, using 2._ for guidance.

E13a

Machine each new impeller wearing ring in accordance with 2._.

E13b

Machine each new casing wearing ring, using 2._ for guidance.

E14a

Machine each new casing wearing ring in accordance with 2._.

E14b

Fit each wearing ring to each corresponding groove in upper and lower casing.

E15

Inspect wearing ring fit. Each ring must not bind and clearance must be in accordance with 2._.

E16

Stone each face of each thrust collar to remove each high spot.

E17

Stone each ___ journal to remove each high spot.

E18

Stone each pinion and gear tooth to remove each high spot.

E19

NOTE: WHEN E20 IS USED, E21 MUST ALWAYS BE A SUBPARAGRAPH. SPECIFY LABYRINTH OR CARBON PACKING.

Scrape, lap, and fit each metal-to-metal joint of each turbine packing box, turbine case, turbine case cover, nozzle, steam chest, steam strainer, and steam strainer cover.
E20a

Lap and fit each metal-to-metal joint of each ___.

E20b

Hand fit and restore the contact between each exposed metal-to-metal, steamtight joint.

E20c

Machine, hand fit, and restore the contact between each exposed metal-to-metal, steamtight joint.

E20d

Machine, hand fit, and restore the contact between each exposed metal-to-metal and gasket seating surface, using 2._ for guidance.

E20e

Inspect contact using blueing transfer method. Contact must be __ percent, with a continuous band of contact ___ wide between each inner bolting perimeter and each sealing surface pressure source.

E21a

Inspect contact using blueing transfer method. Contact must be a minimum of __ percent of total surface area, including a minimum of __ percent continuous contact across each pressure sealing surface.

E21b

Inspect contact using blueing transfer method. Contact must be a minimum of ___ percent of total surface area, including a continuous band with a minimum width of __ percent of the distance from the pressure source to the inner bolting perimeter.

E21c

NOTE: FOR PUMPS WITH IMPELLER WEARING RINGS.

Inspect each assembled pump rotating assembly for concentricity to the shaft axis. Eccentricity at each bearing shaft sleeve and wearing ring mating area must not exceed __ inch total indicator reading.
E22

NOTE: USE FOR MINOR REPAIRS.

Restore each mating surface exposed by ___ removal. Repair by removing each high spot, burr, abrasion, and foreign matter, where removal can be accomplished by hand tool.

E23a

Remove each high spot, burr, abrasion, nick, corrosion, gasket material, and foreign matter from each exposed flange and mating surface.

E23b

Remove each burr and high spot from each exposed sliding surface, screw thread, key, and keyway.

E23c

Assemble each ___, using 2._ for guidance.

E24a

Assemble each ___ in accordance with 2._.

E24b

Assemble, install, align, adjust, and connect ___, fit and install each new ___ and each new part in accordance with 2._:

E24c

Measure and record each final size and clearance, using 2._ for guidance.

E25a

Measure and record each final size and clearance in accordance with 2._.

E25b

Adjust and set the height of each worm gear, using 2._ for guidance.

E26a

Adjust and set the height of each worm gear in accordance with 2._.

E26b

Verify mesh alignment and contact, using blueing method.

E26d

Ensure each thrust face is square with shaft axis to within __ inch total indicator reading.

E27

NOTE: FOR USE OF PRE-ESTABLISHED PARTS LIST FROM A TECHNICAL MANUAL OR OTHER REFERENCE.

Remove each existing and install new gasket, O-ring, pin, key. Material must conform to specifications in __ of 2._.

E28

Manually rotate each shaft prior to installation of pump shaft packing. Rubbing or binding of the rotating assembly is not allowed.

E30a

Rotate shaft by hand one complete revolution. Rubbing or binding of the rotating assembly is not allowed.

E30b

NOTE: USE E31 AS A SUBPARAGRAPH WHEN SECURING DETAILS ARE INVOKED.

Apply antiseize compound conforming to MIL-PRF-907 on each high temperature fastener.

E31

NOTE: FOR TURBINE SEALING SURFACES.

Apply triple boiled linseed oil conforming to ___, with a viscosity of Z-8 or Z-9 on each metal-to-metal steam joint.

E32a

Apply high temperature sealing compound conforming to MIL-S-15204, Type C, on each ___.

E32b

NOTE: FOR REDUCTION GEAR, BEARING AND COUPLING COVERS.

Apply sealant conforming to MIL-S-45180, Type 2, on each metal-to-metal joint of each ___.

E33

NOTE: FOR STEAM AND STEAM DRAINS (50-100 PSIG - 425 DEGREES FAHRENHEIT).

Remove existing and install each new steam piping joint gasket, conforming to Graph Lock 3125SS/Graftech sheet gasket.

E34

NOTE: FOR STEAM AND STEAM DRAINS 600-1500 PSIG, 1000 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new steam piping joint gasket, conforming to MIL-G-24716.

E35

NOTE: FOR STEAM AND STEAM DRAINS 150-1500 PSIG, 775 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new steam piping joint gasket, conforming to MIL-G-24716.
E36

NOTE: FOR PROPULSION PLANT SATURATED FEED SYSTEM 600-2050 PSIG, 300 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new feedwater piping joint gasket, conforming to MIL-G-24716

E37

NOTE: FOR FRESH WATER - CHILLED WATER, FEEDWATER AND CONDENSATE 100 PSIG, 250 DEGREES FAHRENHEIT (MAXIMUM), i.e., HH-P-151, CLASS I, CLOTH INSERTED RUBBER, MIL-PRF-1149, TYPE II, CLASS I, SYNTHETIC RUBBER.

Remove existing and install each new fresh water piping joint gasket, conforming to __, __, __.

E39

NOTE: FOR SALT WATER, INCLUDING SUCTION SEA CHEST STEAM OUT CONNECTIONS, 50-250 PSIG, 150 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new salt water piping joint gasket, conforming to HH-P-151, Class I, cloth inserted rubber, or MIL-PRF-1149, Type II, Class I, synthetic rubber.

E40

NOTE: FOR SALT WATER 50-250 PSIG, 150 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new salt water piping joint gasket, conforming to MIL-PRF-1149, Type I, Class I, synthetic rubber.

E41

NOTE: FOR FUEL OIL 600-1200 PSIG, 775 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new fuel oil piping joint gasket, conforming to MIL-G-24716.

E42

NOTE: FOR DIESEL FUEL OIL 200 PSIG.

Remove existing and install each new fuel oil piping joint gasket, conforming to MIL-G-24716.

E43a

NOTE: FOR GAS TURBINE POWERED SHIPS FUEL OIL 200 PSIG, 150 DEGREES FAHRENHEIT (MAXIMUM).

Remove each existing and install each new fuel oil piping joint gasket, conforming to MIL-G-24716.

E43b

NOTE: FOR LUBRICATING OIL 50 PSIG, 180 DEGREES FAHRENHEIT (MAXIMUM) i.e., HH-P-151, CLASS I, CLOTH INSERTED RUBBER, MIL-PRF-1149, TYPE II, CLASS I, SYNTHETIC RUBBER.

Remove existing and install each new lubricating oil piping joint gasket, conforming to __, __, __.

E44

NOTE: FOR LUBRICATING OIL 150 PSIG, 250 DEGREES FAHRENHEIT (MAXIMUM).

Remove existing and install each new lubricating oil piping joint gasket, conforming to MIL-G-24716.

E45

NOTE: FOR INSTALLATION OF NEW HOLD-DOWN BOLTING FOR MACHINERY WHERE SELF-LOCKING NUTS ARE NOT REQUIRED.

Remove each existing and install new hold-down bolt and nut conforming to MIL-DTL-1222, Type III, Grade 5, alloy steel.

E46

NOTE: FOR INSTALLATION OF NEW HOLD-DOWN BOLTING FOR MACHINERY WHERE SELF-LOCKING NUTS ARE REQUIRED. IDENTIFY TYPE OF MATERIAL FOR SELF-LOCKING NUTS.

Remove each existing and install new hold-down bolt conforming to MIL-DTL-1222, Type III, Grade 5, and self-locking nut conforming to NASM-25027, __.

E47

Install each new aluminized cloth spray shield on ___ pipe, valve flange and component in accordance with ASTM F 1138.

E48

Fill each ___ to the full mark with new ___ conforming to ___.

E49

Allowable leakage at each new and disturbed joint: None.

E50

NOTE: NICKEL COPPER ALUMINUM (K-MONEL) BOLTING OF SEA VALVES AND PIPE JOINTS - MUST BE USED ON INBOARD AND OUTBOARD FLANGES AND BONNET JOINTS WHERE INTEGRITY OF THE HULL AGAINST THE SEA IS CONCERNED; ALSO WHERE VALVES ARE NOT READILY ACCESSIBLE FOR INSPECTION OR MAINTENANCE, i.e., MIL-DTL-24696, COMPRESSED ASBESTOS, MIL-G-24716, GASKET, METALLIC-FLEXIBLE GRAPHITE, SPIRAL WOUND OR ASME B16.20.
SELF-LOCKING NUTS MUST NOT BE USED ON BOILER BLOWDOWN AND DISCHARGE PIPING.

Remove existing and install each new gasket, conforming to__ , __, __.

E51

NOTE: INVOKE APPLICABLE 009-12 REQUIREMENTS.

Weld build-up each cracked, worn, and eroded area of each ___ and machine to dimensions and contours in accordance with 2._.

E52a

Handwork and skim cut each machined, sealing, aligning, mating, and gasket surface.

E53

NOTE: SPECIFY TYPE OF MATERIAL AND MIL-SPEC.

Install and fit each new chock and shim conforming to ___ to accomplish alignment.

E55a

NOTE: FOR PUMPS AND TURBINES, SHIMS MUST CONFORM TO SAE-AMS-QQ-S-763, CRES, GRADE 304.

Install and fit each new shim conforming to ___ to accomplish alignment.

E55b

Drill and ream each equipment support foot and foundation. Fit and install each new tapered dowel.

E56a

NOTE: SPECIFY TYPE OF MATERIAL.

Drill and ream each equipment support foot and foundation. Fit and install new each ___ tapered dowel in each unit to retain unit alignment.

E56b

NOTE: TO MINIMIZE THE POSSIBILITY OF STRAINER BAG RUPTURE, THE USE OF NYLON VICE MUSLIN FILTER BAGS (BECAUSE OF THEIR GREATER STRENGTH) IS RECOMMENDED.

Install new each nylon filter bag in each strainer. Each filter bag must be of continuous filament nylon cloth, scoured finish, 80 by 80 thread, 75 to 100 micron fiber thickness, 125 to 200 micron holes in cloth.

E59a

NOTE: FOR USE IN LUBE OIL SYSTEMS WHERE RUPTURE OF FILTER BAG IS NOT PROBABLE.

Install new each cotton muslin filter bag with material conforming to CCC-C-432, Type 7, Class One, in each strainer.

E59b

Chase and tap each exposed threaded area.

E62

Install new each coupling assembly and key on each ___.

E64a

Bore each coupling hub concentric and to size of shaft diameter within 0.001 inch total indicator reading and perpendicular to the face within 0.001 inch.

E64b

Cut and fit each new coupling, keyway to each mating shaft and coupling hub.

E64c

Align each coupling concentric to within __ inch total indicator reading and parallel to within inch gaged at the major diameter of the coupling face.

E64d

Inspect each bearing stave prior to installation aboard ship by probing with a pen knife or similar device at the rubber-metal interface around the total periphery of the stave to locate any unbonding of rubber from metal. A total cumulative length of unbonding greater than one inch, or any unbonding allowing the knife blade to be inserted deeper than one-fourth inch, must be cause for rejecting the stave.

E65

Measure crankshaft deflection in accordance with 2._.

E66

Machine each brake drum a minimum amount to remove scoring, pitting, and eccentricity. Each drum must be concentric to the drum bore within __ inch total indicator reading.

E67

Clean each sump free of foreign material.

E68

Hone each ___ to remove glazing, scoring, and ridging.

E69

NOTE: USE THE FOLLOWING WHEN CLEANING STEAM TURBINE INTERNALS, i.e., ROTORS, BLADING, CASING INTERNAL SURFACES.

Blast clean each ___ with non-erosive cleaning agent.

E72a

Ensure cleaning agent is aluminum oxide with a particle size no coarser than 220 grit. Other cleaning agents such as glass beads, ash, and walnut shells are acceptable provided that the resultant finish is equivalent to that provided by 220 grit or finer aluminum oxide. The use of sand is prohibited.

E72b

Protect each machined surface against the action of the cleaning agent.

E72c

Measure runout of each ___ shaft using dial indicator.

E73

Assemble each pump rotating assembly, using 2._ for guidance.

E74a

Assemble each pump rotating assembly, in accordance with 2.___.

E74b

Clear each gage line and fitting free of foreign matter and each obstruction.

E75

E79a-E79d Phrases deleted. Invoke SI 009-115 for Rebabbitting.

Polish each ___ to a ___ root mean square average for roughness.

E82

Align each motor and compressor pulley to within __ inch parallel alignment. Each belt must depress __ inch at a point midway between each pulley.

E83

Inert system with a positive pressure of 2 PSIG, using dry, oil-free nitrogen and a nitrogen regulator.

E84a

Install relief valve downstream of nitrogen regulator and set at 5 PSIG.

E84b

NOTE: SPECIFY TYPE OF MATERIAL.

Drill and ream each equipment support foot and foundation. Fit and install each new tapered dowel in each unit. Each dowel must be located in accessible locations for ease of removal that will retain unit alignment.

E86

Clear and clean each pocket and passage free of each obstruction and foreign matter.

E87

Test each remote valve operator assembly for ease of operation and alignment by opening and closing each valve from its remote operating station through 3 complete cycles. Allowable binding: None.

E88

NOTE: FOR USE ON NON-PRESSURE BOUNDARY APPLICATIONS SUCH AS COUPLING TAPER FITS, SPOTTING IN FOUNDATION LINERS, OR OTHER GENERAL APPLICATIONS WHERE BLUEING IS APPROPRIATE.

Inspect contact between ___ and ___ using the blueing transfer method. Contact must be a minimum of ___ percent, evenly distributed over each contact surface.

E89

STANDARD PHRASEOLOGY

SECTION F

1. This section of standard phraseology is for general use in electronic and electrical disciplines.

Disconnect mechanically and remove equipment listed in 1.3._.

F1

Matchmark, identify, and retain ___.

F2

Accomplish an operational test of equipment and each circuit.

F6

NOTE: FOR REFERENCE IN F8 AND F9, USE SE000-01-IMB-010, NAVY INSTALLATION AND MAINTENANCE BOOK (NIMB), SECTION IX, INSTALLATION STANDARDS (SOURCE CD: N0002400003).

Accomplish Swept Voltage Standing Wave Ratio (VSWR) test on ___ in accordance with Paragraph 5-2.11 of 2._. Test must be accomplished over the frequency range of equipment being tested.

F8a

Use standard VSWR reference loads at several points (i.e., 1.1:1, 1.25:1, 1.5:1, 2.1 and 3:1) to establish reference lines from lower to upper frequency limits.

F8b

Accomplish Insertion Loss test on ___ in accordance with Paragraph 5-2.11 of 2._. Tests must be accomplished over frequency range of each piece of equipment being tested.

F9

NOTE: FOR REFERENCE USE PARAGRAPH 3.5 of 0967-LP-177-3040, SHIBOARD ANTENNA SYSTEMS; Vol 4 OR LATEST REF.

Accomplish Time Domain Reflectometer (TDR) test on ___ in accordance with Paragraph _-_ of 2._. Terminate each coaxial cable within its characteristic impedance and coefficient (RHO) control at maximum sensitivity. Record results on an X-Y recorder.

F10

Visually inspect each component prior to cleaning to detect evidence of casualties or deteriorating conditions that may not be apparent after cleaning.

F11

Inspect and test each component part and circuitry for shorts, opens, and grounds and determine missing and defective component parts and circuitry in accordance with 2._.

F12

Remove existing and install each new wire and component part, using 2._ for guidance.

F13

Install Field Change ___. Accomplish the requirements of 2._.

F14

NOTE: USE FOR REPLACE WITH NEW, INSTALL OR INSTALL OF REMOVED - EQUIPMENT.
HOOK-UP DATA COVERED BY 009-73.

Install equipment listed in 1.3._. Install retained hardware of 3._ and install new each fastener using 2._ for guidance.

F15

NOTE: FOR REFERENCE USE MIL-STD-1310, SHIPBOARD BONDING, GROUNDING, AND OTHER TECHNIQUES FOR ELECTROMAGNETIC COMPATIBILITY AND SAFETY. BOND STRAP FABRICATION AND INSTALLATION MUST BE IN ACCORDANCE WITH SECTIONS 7 AND 8 OF SE000-01-IMB-010, NAVY INSTALLATION AND MAINTENANCE BOOK (NIMB), SECTION VII, INDUSTRIAL ELECTROMAGNETIC COMPATIBILITY (IEMC) WORK PROCESS INSTRUCTIONS (SOURCE CD: N0002400003), INDUSTRIAL ELECTROMAGNETIC COMPATIBILITY (IEMC) WORK PROCESS INSTRUCTIONS.

Bond and ground equipment in accordance with 2._. Each grounding strap must be CRES 316L for topside equipment.

F16a

NOTE: FOR REFERENCE USE (10001) OD 32382, GROUNDING AND BONDING EQUIPMENT ENCL. CHASSIS AND CASES, DESIGN AND INSTALLATION.

Bond and ground equipment in accordance with 2._ and 2._.

F16b

Ensure acceptable criteria for equipment to hull ground via bond or ground strap is one-tenth ohm maximum.

F17

Remove existing and install new each lug conforming to MIL-T-16366.

F18

Remove existing and install new each conductor identification sleeving conforming to SAE-AMS-DTL-23053, Class I, white, marked with indelible ink.

F19

NOTE: FOR REFERENCE IN F22-F24, USE SE000-01-IMB-010, NAVY INSTALLATION AND MAINTENANCE BOOK (NIMB), SECTION IX, INSTALLATION STANDARDS (SOURCE CD: N0002400003).

Maintain temporary pressurization of ___ in accordance with Paragraph 5-2.7.1 of 2._ upon completion of Insertion Loss Test.

F22

Purge and pressurize ___ in accordance with Paragraph 5-1.14 of 2._ upon completion of installation.

F23

Blank ___ during unattended periods and maintain pressurization in accordance with Paragraph 5-2.6.6 of 2._.

F24

NOTE: USE F26a-F26c AND F28a-F28b FOR POST-REPAIR TEST.

Accomplish each Performance Test of 2._. Align and adjust within each tolerance specified therein.

F26a

Record each reading on each performance summary sheet.

F26b

Submit one legible copy, in hard copy or approved transferrable media, of each completed summary sheet to the SUPERVISOR.

F26c

Accomplish an operational test of ship's service telephone installation. Accomplish adjustments to verify operational performance in accordance with 2._.

F28a

Verify each circuit for audio output, clarity of voice transmission, and correct phone number.

F28b

Measure insulation resistance to ground for each stationary field winding and rotating field winding using a 500 volt direct current megger. Do not apply high voltages through solid state devices.

F29

Accomplish each maintenance/reference standard test and record each measurement of each piece of equipment listed in 1._ in accordance with 2._. Calibrate, test, and adjust each piece of equipment and verify the performance of the equipment is within tolerance, using regulated power within the limits specified in 2._.

F30a

Install and connect equipment aboard ship prior to maintenance/reference standards test.

F30b

NOTE: USE D1 AS SUBPARAGRAPH TO F35

Remove each unused foundation, cable hanger, wireway, bracket, and stud.

F35

Install new each foundation and stud for ___. Template from new equipment. Install equipment on new foundation.

F36

Silver plate ___ in accordance with ASTM B 700.

F38

STANDARD PHRASEOLOGY

SECTION G

1. This section of standard phraseology is for general use in piping disciplines.

Hydrostatically test ___, using ___ at ___ PSIG for a minimum of _ minutes. Allowable leakage: None.

G1

NOTE: USE ASTM F993, OR 810-5596087, SUPSHIP PORTSMOUTH STANDARD DRAWING VALVE LOCKING DEVICE (FOR CABLE LOCKING DEVICES, BUTTERFLY VALVES, AND LOCKED POSITION INDICATORS).

Install new each locking device on each valve listed in ___ in accordance with 2._.

G2

Restore each piping flange mating surface exposed by disassembly of piping system. Repair by removing each high spot, burr, abrasion, and foreign matter, where removal can be accomplished by a hand tool. Maintain phonographic finish on each flange that has it.

G4

Ensure the copper-nickel piping is MIL-T-16420, Type __, Class __, __-inch wall thickness.

G5a

Ensure the carbon steel piping is MIL-P-24691.

G5b

Ensure the copper piping is MIL-T-24107, __-inch wall thickness.

G5c

Purge, evacuate, and dehydrate ___ in accordance with 2._. Charge with refrigerant ___ in accordance with 2._.

G6

NOTE: FOR USE WITH 810-4714432, FOR PIPING HANGERS.

NNSY Standard Drawing, Std Pipe Hangers Fabrication Dets & Instl Instr (Non-Nuc Constr)

G7

Empty and clean ___, including piping associated with this Work Item.

G8

Align the piping to each ___. Piping must be supported independently and must not impose a strain.

G9a

Align the piping to each ___. Piping must be supported independently and must not impose a strain on the equipment.

G9b

NOTE: FOR REFERENCE USE 804-1385781, HANGERS, PIPE, FOR SURFACE SHIPS.

Install each new hanger on new piping in accordance with 2._.

G10a

Install each new hanger to support the piping and prevent vibration in accordance with 2._.

G10b

Accomplish each test in accordance with General Notes ___ of 2._.

G12

MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components for Naval Surface Ships
G14a

802-5959353, MIL-STD-777D Modified for DDG-51 Class, Schedule of Piping, Valves, Fittings, and Associated Piping Components

G14b

NOTE: FOR REFERENCE USE MIL-STD-777, SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS (G14a).

FOR REFERENCE USE 802-5959353, MIL-STD-777D MODIFIED FOR DDG-51 CLASS, SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS (G14b).

Each new material must conform to 2._, including Category and Group __.

G15

NOTE: ALLOWS PLANNER USE OF OTHER NAVSEA-APPROVED GASKETS AND FASTENERS NOT COVERED IN MIL-STD-777. FOR BUTTERFLY VALVES INSTALLED IN FIREMAIN AND SALTWATER SYSTEMS, USE GASKET MATERIAL CONFORMING TO MIL-DTL-24696, TYPE II (FOR DDG-51 CLASS ONLY).

Install each valve, installing new each gasket conforming to ___ .

G16

NOTE: FOR REFERENCE USE MIL-STD-777, SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS FOR NAVAL SURFACE SHIPS (G14a).

FOR REFERENCE USE 802-5959353, MIL-STD-777D MODIFIED FOR DDG-51 CLASS, SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS (G14b).

Install each valve, installing new each gasket conforming to 2.___, including Category and Group ___.

G17

Accomplish an operational test of the new and disturbed piping at ___ PSIG. Allowable external leakage: None.

G22

Accomplish an operational test of each newly installed valve at __ PSIG.

G23a

Cycle each valve from full closed to full open to full closed 4 times. Allowable external leakage: None.

G23b

NOTE: FOR REFERENCE USE S9086-RK-STM-010/CH-505, PIPING SYSTEMS.

Measure and record alignment of each expansion joint piping flange in accordance with Paragraphs 505-3.3.1 through 3.3.6.5 of 2._.

G24a

Submit one legible copy, in hard copy or approved transferrable media, of a report listing each measurement taken to the SUPERVISOR.

G24b

Nitrogen pressure test each brazed and mechanical joint at __ PSIG for a minimum of 15 minutes.

G25a

Inspect each brazed and mechanical joint, using a soap bubble method. Allowable leakage: None.

G25b

Machine each seat and disc to remove hardfacing.

G26a

Weld build-up each seat and disc.

G26b

Accomplish the requirements of 009-12 of 2.1, including Table One, Column C, Lines One through 9.

G26c

Machine each seat and disc to ___.

G26d

Accomplish nondestructive testing in accordance with Line __.

G26e

Machine each seal ring seating area to remove stainless steel inlay.

G27a

Weld build-up each seal ring seating area.

G27b

Accomplish the requirements of 009-12 of 2.1, including Table One, Column H, Lines One through 9.

G27c

Machine each seal ring seating area to ___.

G27d

Accomplish nondestructive testing in accordance with Line __.

G27e

NOTE: FOR REFERENCE USE MIL-STD-777, SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS FOR NAVAL SURFACE SHIPS (G14a).

FOR REFERENCE USE 802-5959353, MIL-STD-777D MODIFIED FOR DDG-51 CLASS, SCHEDULE OF PIPING, VALVES, FITTINGS, AND ASSOCIATED PIPING COMPONENTS (G14b).

Install new each ___ valve in place of those removed in 3._. Each new material must conform to 2._, including Category and Group ___.

G28a

Shop test and set each relief valve prior to installation.

G28b

Ensure the test medium is ___.

G28c

Ensure seat tightness is ___.

G28d

Ensure lifting pressure is ___.

G28e

Install each wire and leadlock seals and attach a metal tag to each valve stamped with the following information after setting each relief valve:

Ship name and hull number
Valve number or identification
Date valve tested and set
Name of repair facility

G28f