

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

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## 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.
  - 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 shall not be used in coast-wide bidding or extended solicitations. LSIs are numbered sequentially in the 099-XX series (i.e., 099-XXJA for a Southeast RMC LSI).
- E. Templates - Work Items that can be modified and used for single or multiple ship classes.
  - 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 shall 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 shall 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 shall fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.
- 4. Basic Work Shell Templates (BSWTs)- When no applicable template(s) (SWT, CSWT or, LWT) or previously written work item is identified that is applicable, develop BSWT using the requirements of Section VII.**
- 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 shall fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.**
- F. The Master Specification Catalog Maintenance Office (MSCMO) is responsible for approving and maintaining CSWTs and SWTs. LWTs are approved and maintained at the local level.
- 1. The use of the applicable CSWTs or SWT 077-001 in preparation of Hazardous Waste Work Items is non-deviational and mandatory. User activity shall fill in applicable blanks only.
  - 2. The use of the applicable CSWTs or SWT 992-031 in preparation of Cleaning and Pumping Work Items is mandatory.
    - 2.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.
    - 2.b User activity shall fill in all blanks or use "Intentionally Left Blank" if non-applicable as shown in Section VII-B.

## 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 shall aggressively pursue this mandatory program and shall 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 shall be

proposed by interested activities 4 months prior to the scheduled meeting. The nominating activity shall 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, shall 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 shall 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 shall 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:	<u>009-01</u>	
DATE:	<u>01 AUG 2008</u>	
CATEGORY:	<u>I</u>	

C. SIs and invoking phraseology (Section A of Annex B) developed at the SSRAC meeting shall 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.

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

E. Annex A contains an invoking guide for Category I Standard Items. This Annex shall be updated after each SSRAC meeting and shall 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 shall be utilized when applicable.

H. Planner's Notes should be used to explain "fill in the blank" information on SWTs, CSWTs, LWTs and **BSWTs**. 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 shall 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 should 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 should be limited to the requirements necessary to achieve the desired result and should not upgrade equipment and installations to exceed original design requirements without approval of the customer. Work Items shall 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 shall 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 shall 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 shall appear in 4.1.

# of #

ITEM NO: \_\_\_\_\_

FY- \_\_\_\_\_

B. The following format shall 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 or **BSWT** 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 shall 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 shall be used to identify parts in paragraph 3 | (use Standard Phrase B30).

TOTAL	NAME	PIECE	REF.	FIGURE	PART
<u>REQUIRED</u>	<u>OF PART</u>	<u>NO.</u>	<u>NO.</u>	<u>DRAWING NO.</u>	<u>NO.</u>

# of #

ITEM NO: \_\_\_\_\_

SHIP: \_\_\_\_\_

4. NOTES:

4.1 None. \*

4.1.1

4.2

\* In the event there are no NOTES, the word None shall 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 shall appear.

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

5.1 LLTM:

TOTAL	NAME	PIECE	REF.	NATIONAL	PARA
<u>QUANTITY</u>	<u>OF PART</u>	<u>NO.</u>	<u>NO.</u>	<u>STOCK NO.</u>	<u>NO.</u>
<u>PROVIDED</u>					

5.1.1

5.2 PUSH MATERIAL:

TOTAL	NAME	PIECE	REF.	NATIONAL	PARA
<u>QUANTITY</u>	<u>OF PART</u>	<u>NO.</u>	<u>NO.</u>	<u>STOCK NO.</u>	<u>NO.</u>
<u>PROVIDED</u>					

5.2.1

# of #

ITEM NO: \_\_\_\_\_





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

2. The remainder of SIs and LSIs shall 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, **BSWTs**, and Work Items shall 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, or **BSWTs**, 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 shall 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 shall be SCOPE. The SCOPE paragraph shall be completed as follows:

**a. Subparagraph 1.1 - The word "Title" shall appear first, followed by a colon. A brief title will then follow in noun, verb order. 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 shall 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 TITLES:

**ShipAlt; accomplish**

**The Class Ship Alt number (CG47-00123K) and Title will be listed in Paragraph 1.3 "Identification".**

ALTERATION EQUIVALENT TO REPAIR (AER) TITLES:

**AER; accomplish**

**The Class AER number (CG Class AER 123) and Title will be listed in Paragraph 1.3 "Identification".**

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

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

<b>Engine Room Number One (4-174-0-E)</b>	<b>Main Deck, Frame 115</b>
<b>Auxiliary Machinery Room No. One (5-67-0-E)</b>	<b>Test Lab (2-174-6-Q)</b>
<b>JP-5 Pump Room (5-132-0-E)</b>	<b>Weather Deck 02 Level, Frames 218-227, Port</b>

<i>Pilot House (04-130-0-C)</i>	<i>Service Tank (4-220-1-F)</i>
<i>Generator Room (3-370-0-E)</i>	<i>Passage (1-42-01-L)</i>

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" shall be used to avoid inadvertent omissions for work requirements that are in fact widely dispersed. This phrase, however, shall not be used when a concise and explicit location can be readily identified. The security classification of the spaces shall 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 shall 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 shall 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, Firemain Piping, 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. **Shipalt and AER Titles are to be used in Identification.** 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 (25 FT), 8 Inch IPS Piping, 70/30 CUNI, CL 200, MIL-T-16420, 6 Inches Downstream Of The First Flange Downstream of Valve FM-256 To 6 Inches Upstream Of The Second Flange Downstream Of Valve FM-256*
- *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**
- **ShipAlt DDG51-73395D, Bulkhead Shaft Seal Upgrade Modification**
- **DDG51 Class AER 66074, Sonar Dome Scuttle Improvement**

**UNIT OF ISSUE**

<b>EA: EACH</b>	<b>BX: BOX</b>	<b>FT: FEET</b>	<b>LF: LINEAR FEET</b>
<b>PC: PIECE</b>	<b>KT: KIT</b>	<b>SF: SQUARE FEET</b>	

d. Subparagraph 1.4 - Shall 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 shall be shown parenthetically in upper case letters, following its unclassified title. For spaces, appropriate deck and frame designations shall 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 shall 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 should 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 shall 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 REQUIREMENTS, paragraph 4 NOTES, attachments, or tables), shall 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 shall 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) Basic Government specifications (including the GSO, NSTMs, etc.), standards (**including MIL, DOD, etc.**), or NAVSEA Standard Plans shall be referenced without prefix zeroes or suffix letters or numbers which identify revisions or amendments, i.e., MIL-STD-XXX, followed by the title. For example:

MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components for Naval Surface Ships

S9AA0-AB-GOS-010, General Specifications for Overhaul of Surface Ships (GSO)

S9086-RK-STM-010/CH-505, Piping Systems

(a) Equipment Technical Manuals and Drawings which are not NAVSEA Standard Plans shall be identified by group number, drawing number, latest revision 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

(b) Revision numbers and/or revision date of these types of references shall not be included when preparing Standard Items (SIs).

(4) References shall 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 shall 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, Pollution Control vice S9086-T8-STM-010/CH-593, 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 **shall** use the following format:

2.\_\_ Intentionally Left Blank

(c) Reference format for 4720 Material Summaries shall be as the File No. and title appears on the 4720 cover sheet. Reference format for Design Memos, Planning Memos, and Test Procedures shall 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

(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)

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

(6) Documents such as federal regulations outside the Department of Defense and public laws shall 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/010/GSO, 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.\_\_.

2.\_\_ S9086-T8-STM-010/CH-593, Pollution Control

3.\_\_ Accomplish sanitary and hygienic procedures of Paragraph 593-4.2.3 through 593-4.2.4.1.3 of 2.\_\_.

(8) PMS-400 approved 4720/3 Material Identification Documents for ShipAlts, AERs, or repair kits may be listed in paragraph 2 as a reference. The reference shall 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.)

d. If short enough (single page or less), the reference material shall 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 shall 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 shall 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 shall 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 shall 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 shall 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 shall be: "\_\_\_\_\_, using 2.\_\_ for guidance". However, it can become a catch-all and its use shall be held to a minimum.

(4) When a Work Item references Class and Hull specific configuration and Ship Alteration information, planning activity shall 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 material is not appropriate to use directly as a reference, then the material shall be lifted out and rephrased as needed to be used as a SUPSHIP/RMC/SURFMEPP Reference.

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

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

(3) The use of SUPSHIP/RMC/SURFMEPP References shall 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.



4. Paragraph 3 shall 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.

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

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

c. When abbreviations and acronyms are used, the complete phrase should 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. Subparagraph 3.1 of the REQUIREMENTS shall 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.

e. Sentence structure of REQUIREMENTS in Work Items shall be verb, noun format, giving for each item the item identification, location, and compliance requirements. A lead paragraph shall include phraseology that begins with a verb and refers to paragraphs 1.2 and 1.3 within the sentence structure where applicable (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).

(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, shall be implemented in the REQUIREMENTS paragraph by a description of the work to be accomplished. The written sequence of work requirements shall normally be in chronological sequence of work accomplishment. Each subparagraph shall express a complete thought in clear, concise language that is contractually sound. Wording that is ambiguous shall 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. The mandatory parts to be replaced shall 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 shall be listed in paragraph 5. Common shelf item parts to be replaced, i.e., fasteners, gaskets, cotter pins, O-Rings, and seals, shall 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 shall 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., shall be prepared in accordance with Section VII.

k. Inspections and tests that are not already required by Standard Items shall 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 shall inspect/verify and document the inspection or test. Inspections and tests requiring Government notification shall 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 shall 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 shall 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 shall be notified to permit observation of a specific inspection or test by the Government.

(2) The following criteria shall be used for identification of inspections and tests requiring annotation with (I), (V), or (G) symbols:

**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)  
I
  - 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 where as 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 re-assembly to ensure compliance with Navy technical manual requirements and Standard Items.*** (Q)
  - ***Inspect and provide technical guidance and assistance during process performance, equipment re-assembly and adjustment, and when specified, coating application. Verify re-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 shall 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)**.

1. Reports - Written reports are necessary in order to record results of inspections, tests, and work accomplished. The planner should keep in mind that reports are costly to generate and to process. Reports should 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 shall also appear in the REQUIREMENTS paragraph. Invoking the requirement to develop Process Control Procedures shall be invoked only where contractual compliance of the product cannot be ensured by inspections

and tests. Reference shall be made to applicable standards or specifications that govern the process to be controlled. Any requirements that should be addressed by the procedure shall be explicitly identified in NSI 009-09 requirements. The following additional requirement applies for PCPs:

(1) PCPs shall 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.) shall not be invoked in any Work Item without sufficient justification to permit a Justification and Approval (J&A).***

5. Paragraph 4 of the Work Item shall always be NOTES and shall contain information or explanations that do not lend themselves to inclusion in the REQUIREMENTS. These notes shall 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 shall be GOVERNMENT FURNISHED MATERIAL (GFM). All GFM listed in paragraph 5 shall be installed by the requirements invoked in paragraph 3.***

***a. Major components or equipment with anticipated delivery dates after the commencement of the availability shall 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 should 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.

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

(1) LLTM: (a) Material whose delivery date exceeds 30 days.

(b) Government provided material already in the possession of/held by/release controlled by the Ship/Navy/RMC (e.g., Hatch, Switch, Pump, Valve, Sonar Dome, etc.).

(2) PUSH: Alteration material provided by a program or program office.

(3) KITTED: Alteration material supplied by an outside activity.

Activities may utilize the PMS-400 approved 4720/3 as a Reference for ShipAlt/AER, or repair kits.

Examples for each of the above categories:

	<u>TOTAL</u> <u>QUANTITY</u> <u>PROVIDED</u>	<u>NAME</u> <u>OF PART</u>	<u>PIECE</u> <u>NO.</u>	<u>REF.</u> <u>NO.</u>	<u>NATIONAL</u> <u>STOCK NO.</u>	<u>PARA</u> <u>NO.</u>
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 shall contain 8 digits. The first 5 digits shall be assigned using the appropriate ESWBS number.

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

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

The 6th, 7th, and 8th digits shall 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 shall 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, shall be numbered 221-8X-XXX.

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

2. SI numbers shall be assigned sequentially in the 009-XX series, such as 009-01, 009-09, ... 009-38. Local Standard Item numbers shall 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. USE OF STANDARD WORK TEMPLATES AND CLASS STANDARD WORK TEMPLATES:

1. Whenever an applicable CSWT is available, it shall be used verbatim except as exempted in Paragraph 2 below. In the absence of a CSWT, an applicable SWT shall be used verbatim except as exempted in Paragraph 2 below.

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

a. Adding or deleting entire REQUIREMENTS paragraphs to suit the authorized work.

b. Filling in appropriate blanks with data to suit the technical requirements and the authorized work.

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

3. The following procedure should 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 shall be used in converting templates to Work Items:

a. Fill in the heading. File numbers and revision dates of templates shall 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 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.
- e. Review paragraph 4, NOTES, and add or delete subparagraphs as appropriate.
- f. Review paragraph 5, GOVERNMENT FURNISHED MATERIAL (GFM), and add or delete GFM to suit the authorized work.
- g. Review paragraph 2, REFERENCES, and add or delete references as required to suit any changes made in the REQUIREMENTS.

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

a. The CSWT shall 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 shall 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 gages and other instrumentation shall be required. Generally, instruments costing less than 50 Dollars each should be removed and new instruments installed.

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

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

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

(6) Inspection of the alignment of piping to the equipment flanges shall 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 should 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 shall 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 should not be removed from their setting unless necessary due to damaged threads or incorrect length. Replaced studs shall have an exposed thread length of not less than 2 and not more than 5 threads.

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

d. The CSWT shall include the operational test of the equipment and shall invoke the applicable portion of the approved test procedure, if one exists. The Ship's Force shall 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 shall be specified in the CSWT.

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

f. The CSWT shall 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 should 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. When attachments are used, the attachments shall 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. Attachments shall never be utilized as a REFERENCE in any Work Item. Rarely will more than 2 or 3 attachments be required for any given Work Item. Each attachment will contain the Work Item number on each page and each page shall be numbered. The total number of pages in the Attachment shall be included in the total number of pages in the Work Item. For example, the footer on the attachment of a 3-page Work Item with a one-page attachment would read Page 4 of 4. In most instances, only one footer will be required.

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

3. Subparagraphing is limited to 4 digits (example 3.1.1.1). Each subparagraph is limited to a single thought or work sequence.

4. Page numbering shall 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 shall be indicated in the lower right corner of each page.

5. 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)

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

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

**8. The numeral "1" shall not be used but always be written as "one" or "One" as applicable. All numbers greater than one shall 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 shall 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 "shall" when the provision is mandatory; "may" when expressing a non-mandatory provision; "will" when expressing a simple future tense or to express a declaration of purpose on the part of the Government.

DO make positive, concise statements that cannot be misinterpreted.

DO verify that reference material is available and applicable.

DO use attachments to improve clarity.

DO become familiar with available background and reference material 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 provide a manday and material pool when frontloading Work Items "as designated by the SUPERVISOR".

DO use "when directed by the SUPERVISOR" when the start date in a frontload statement 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")

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 and references. 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 Standard Item requirements within the Work Items.

#### H. GLOSSARY OF PREFERRED TERMS

1. The following is a list of preferred terminology that should be used.

<u>PREFERRED</u>	<u>NOT PREFERRED</u>
Accomplish the requirements	Accomplish the work ... or Comply with
Accomplish	Conduct ... or Perform (Conduct may be used for an operational test)
Remove	Drain
Remove existing and install	Replace ... or Unship new
Disconnect	Unbolt
Preserve	Paint
Inspect	Check
Fabricate	Make
Measure	Take
Shall be	Is to be

(Specify a Quantity)	All
Verify	Demonstrate ... Prove
Ensure	Assure ... or Insure
Listed	Identified
Identified	Found
Through	Thru
5,000 dollars	5000 dollars ... or \$5000
1,000	1000

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 shall 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.

<u>ITEM NO.</u>	<u>TITLE</u>	<u>USAGE/COMMENTS</u>
009-01	General Criteria; accomplish	Invoke for all solicitations.
009-02	Environmental Compliance Reports for Material Usage at Naval Facility; accomplish	Invoke when work is being accomplished at a Naval facility where environmental compliance requirements are not specified locally.
009-03	Toxic and Hazardous Substance control	Invoke for all solicitations.
009-04	Quality Management System; provide	Invoke for all solicitations.
009-06	Maintaining Protection and Cleanliness from Non-Radioactive Operations; accomplish	Invoke for all solicitations.
009-07	Confined Space Entry, Certification, Fire Prevention and Housekeeping; accomplish	Invoke for all solicitations on manned vessels.
009-08	Shipboard Fire Protection; accomplish	Invoke for all solicitations on manned vessels.
009-10	Asbestos-Containing Material (ACM); control	Invoke for all solicitations.
009-18	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.
009-20	Government Property; control	Invoke for all solicitations.
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.

<u>ITEM NO.</u>	<u>TITLE</u>	<u>USAGE/COMMENTS</u>
009-23	Interference; remove and install	Invoke for all solicitations.
009-24	Authorization, Control, Isolation, Blanking, Tagging, and Cleanliness; accomplish	Invoke for all solicitations.
009-29	Asbestos-Free Pipe Hanger Liner Material; install	Invoke for installation of asbestos-free pipe hanger liner material.
009-34	Fire Protection of Unmanned Vessel at Contractor Facility; accomplish	Invoke when work is being accomplished on unmanned vessels at Contractor's facility.
009-39	Technical Manual Contract Requirement (TMCR) for a New Technical Manual for Commercial Equipment/Component; accomplish	Invoke for all solicitations.
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.
009-60	Schedule and Associated Reports for Availabilities Over 9 Weeks in Duration; provide and manage	Invoke for availabilities over 9 weeks in duration.
009-61	Shipboard Use of Fluorocarbons; control	Invoke for all solicitations.
009-65	Polychlorinated Biphenyls (PCBs); control	Invoke for all solicitations.
009-67	Integrated Total Ship Testing; manage	Invoke for all CNO availabilities.
009-69	Heavy Weather/Mooring Plan; provide	Invoke for all solicitations.

<u>ITEM NO.</u>	<u>TITLE</u>	<u>USAGE/COMMENTS</u>
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.
009-72	Physical Security at a Private Contractor Facility; accomplish	Invoke when work is being accomplished at contractor's facility.
009-73	Shipboard Electrical/Electronic Cable Procedure; accomplish	Invoke for all solicitations requiring electrical work.
009-74	Occupational, Safety and Health Plan; accomplish	Invoke for all solicitations.
009-79	Government Owned Material (GOM) Status; report	Invoke for all solicitations.
009-80	Ship Facilities; maintain	Invoke for availabilities when ship's crew remains onboard.
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.
009-82	Installation of Equal Component Vice Specified Component; report	Invoke for all solicitations.
<b>009-84</b>	<b>Threaded Fastener Requirements; Accomplish</b>	<b>Invoke for all solicitations involving fasteners.</b>
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.

<u>ITEM NO.</u>	<u>TITLE</u>	<u>USAGE/COMMENTS</u>
009-94	General Environmental Work at Contractor Facility; accomplish	Invoke when work is being accomplished at the contractor's facility.
009-97	Shipbuilding and Ship Repair Operations National Emission Standard for Hazardous Air Pollutants (NESHAPS) for Surface Coatings Information; provide	Invoke for all solicitations.
009-99	Ship Departure Report; provide	Invoke for all solicitations.
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).
009-102	Alteration Verification; provide	Invoke for all solicitations that contain ship modernization Work Items.
009-103	Weight and Moment Change Data; provide	Invoke when work being accomplished will result in weight and moment changes.
009-106	Work Authorization Form Coordinator (WAFCOR); provide	Invoke for all solicitations.
009-108	Aircraft Carrier Transit and Berthing; accomplish	Invoke for aircraft carriers when work is being accomplished at the contractor's facility.
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 Availabilities 9 Weeks or Less in Duration; provide and manage	Invoke for availabilities 9 weeks or less in duration.

<u>ITEM NO.</u>	<u>TITLE</u>	<u>USAGE/COMMENTS</u>
009-117	Combat Systems Light-Off; support	Invoke for solicitations requiring a Combat Systems Light-Off.
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.
009-122	Temporary Padeye; install and remove	Invoke for all solicitations.



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 shall 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 shall be made by submitting the recommended change to the SSRAC for consideration at the annual meeting. The following basic guidelines shall be applied when evaluating new proposed phrases.

A. Phrases shall be applicable for all user activities and, therefore, should not be limited to a particular class of ship. However, when phrases do apply to a particular class of ship, it should be noted (e.g., F15b).

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

C. The sentence structure shall be grammatically applicable for singular and plural situations. To achieve this, the word "each" should 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 shall 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 shall be verb, noun format as required by Appendix 4-E, Section VII, paragraph B-4(e).

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

G. Ambiguous wording shall 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 should 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-VG-STM-010/CH-634, Deck Coverings

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." shall be deleted when guidance is not available. The words "in accordance with 2.\_\_\_" shall 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 SHALL 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 009-84 THREADED FASTENER REQUIREMENTS; ACCOMPLISH,  
IF INSTALLATION 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 SHALL 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 REQUIRED FOR THIS WORK ITEM.

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

A12a

NOTE: A12b SHALL BE USED ONLY AS A SUBPARAGRAPH TO A12a.  
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

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009-13 METER; 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 meter in accordance with 009-13 of 2.1.

A13b

---

009-14 GAGE, SWITCH AND THERMOMETER; REPAIR

NOTE: USE B50 AS A SUBPARAGRAPH TO A14a.

Accomplish the requirements of 009-14 of 2.1 for each \_\_\_\_.

A14a

Calibrate and adjust each new gage, switch and/or thermometer in accordance  
with 009-14 of 2.1.

A14b

---

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

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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 shall 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 SHALL 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

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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

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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

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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

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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 SHALL 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

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

Accomplish the requirements of 009-38 of 2.1 for \_\_\_\_\_.

A38

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009-41 TECHNICAL MANUAL CONTRACT REQUIREMENT (TMCR) FOR A TOPICALLY STRUCTURED TECHNICAL MANUAL; ACCOMPLISH

NOTE: USE FOR NEW MILITARY TECHNICAL MANUALS FOR NON-COMPLEX EQUIPMENT BEING PROCURED TO MILITARY SPECIFICATIONS.

Accomplish the requirements of 009-41 of 2.1.

A41

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009-42 TECHNICAL MANUAL CONTRACT REQUIREMENT (TMCR) FOR UPDATING

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TECHNICAL MANUAL; ACCOMPLISH

NOTE:        USE FOR UPDATING EXISTING NAVSEA TECHNICAL MANUALS (INCLUDING SHIP'S SELECTED RECORD DATA) TO REFLECT CHANGES IN HARDWARE CONFIGURATION.

Accomplish the requirements of 009-42 of 2.1.

A42

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009-43        ENGINEERING PLANT PRODUCTION COMPLETION DATE (PCD), LIGHT-OFF ASSESSMENT (LOA) SUPPORT; PROVIDE

Accomplish the requirements of 009-43 of 2.1.

A43

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NOTE:        FOR STANDARD ITEMS 009-45, 009-46, 009-47, 009-48, 009-50, 009-51, 009-52, 009-53, 009-55, AND 009-96, VALVE REMOVAL AND REINSTALLATION SHALL BE SPECIFIED IN THE INVOKING WORK ITEM.

009-45        TAPERED PLUG VALVE; REPAIR

NOTE:        A45b AND A45c SHALL BE SUBPARAGRAPHS TO A45a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS SHALL 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

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

NOTE: A46b AND A46c SHALL BE SUBPARAGRAPHS TO A46a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS SHALL 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

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009-47 GATE VALVE; REPAIR

NOTE: A47b AND A47c SHALL BE SUBPARAGRAPHS TO A47a.

FOR SHOP REPAIR AND TEST.

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

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009-48 PRESSURE SEAL BONNET VALVE SHOP REPAIR; ACCOMPLISH

NOTE: A48b AND A48c SHALL BE SUBPARAGRAPHS TO A48a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS SHALL 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

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

NOTE: FOR IN-LINE REPAIR.

OPERATIONAL TEST OF THE VALVE SHALL 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

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009-50 HORIZONTAL SWING CHECK VALVE; REPAIR

NOTE: A50b SHALL BE A SUBPARAGRAPH TO A50a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM FOR SEAT TIGHTNESS SHALL BE SPECIFIED IN THE INVOKING WORK ITEM.

SHALL 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

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009-51      GLOBE, GLOBE ANGLE, AND GLOBE STOP CHECK VALVE; REPAIR

NOTE:      A51b AND A51c SHALL BE SUBPARAGRAPHS TO A51a.

FOR SHOP REPAIR AND TEST.

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

SHALL NOT BE USED FOR HIGH PRESSURE STEAM VALVES.

Accomplish the requirements of 009-51 of 2.1 for each globe valve listed in \_\_\_\_\_, using 2.\_\_\_\_ for guidance.

A51a

Ensure the seat tightness test pressure is \_\_\_\_\_ PSIG.

A51b

Ensure the test medium is \_\_\_\_\_.

A51c

---

009-52      RELIEF VALVE; REPAIR

NOTE:      A52b-A52d SHALL BE SUBPARAGRAPHS TO A52a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS AND VALVE LIFTING SHALL BE SPECIFIED IN THE INVOKING WORK ITEM.

SHALL 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 STEAM VALVE SHOP REPAIR; ACCOMPLISH

NOTE: A53b AND A53c SHALL BE SUBPARAGRAPHS TO A53a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS SHALL  
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 STEAM VALVE IN-LINE REPAIR; ACCOMPLISH



NOTE:        FOR IN-LINE REPAIR.

OPERATIONAL TEST OF THE VALVE, INCLUDING BYPASS VALVE,  
SHALL 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 SHALL BE SUBPARAGRAPHS TO A55a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR VALVE INLET AND  
REGULATED PRESSURE/TEMPERATURE SHALL BE SPECIFIED IN  
THE INVOKING WORK ITEM.

A55a-A55c SHALL 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 SHALL BE SUBPARAGRAPHS TO A55d.

A55d-A55f SHALL 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

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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

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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

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009-59 ORGANOTIN ANTIFOULING MATERIAL; CONTROL

NOTE: INVOKE FOR ALL DOCKING AVAILABILITIES "USE 009-59 PHRASEOLOGY WHEN MATERIAL USAGE OF ORGANOTIN IS IDENTIFIED FOR REPAIR WORK RELATED TO UNDERWATER HULL".

Accomplish the requirements of 009-59 of 2.1 for \_\_\_\_\_.

A59a

Accomplish the requirements of 009-59 of 2.1.

A59b

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

Accomplish the requirements of 009-62 of 2.1 for \_\_\_\_\_.

A62

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009-63 LUBRICATING OIL AND HYDRAULIC FLUID; ANALYZE

NOTE: A63b SHALL 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

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009-64 SYNTHETIC FIRE-RESISTANT HYDRAULIC FLUID; CONTROL

NOTE: INVOKE FOR WHEN WORKING WITH MIL-H-19457 AND SYNTHETIC FIRE-RESISTANT HYDRAULIC FLUID IS USED.

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Accomplish the requirements of 009-64 of 2.1 for \_\_\_\_.

A64a

Accomplish the requirements of 009-64 of 2.1.

A64b

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009-68 BOLTED BONNET VALVE; REPAIR

NOTE: FOR IN-LINE REPAIR.

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

Accomplish the requirements of 009-68 of 2.1 for each in-line bolted bonnet valve listed in \_\_\_\_\_, using 2.\_\_\_\_ for guidance.

A68

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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 SHALL BE LISTED.

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

A71b

Ensure hydrostatic 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 SHALL BE LISTED.

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

A71h

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

A71i

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

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

A71j

NOTE: USE A711 FOR AIR TEST OF PIPING SYSTEMS WHERE WATER WOULD BE DETRIMENTAL.

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

A711

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 new and disturbed \_\_\_\_\_ piping systems.

A71n

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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

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

Accomplish the requirements of 009-76 of 2.1 for \_\_\_\_\_.

A76

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009-77        COFFERDAM INSTALLATION; ACCOMPLISH

NOTE:        A PROCESS CONTROL PROCEDURE (PCP) IS REQUIRED FOR COFFERDAM INSTALLATION;009-09 PHRASEOLOGY SHALL 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

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009-83 WIRE ROPE ASSEMBLY; FABRICATE

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

Accomplish the requirements of 009-83 of 2.1 for \_\_\_\_.

A83a

Accomplish the requirements of 009-83 of 2.1.

A83b

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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

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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

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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

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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 REQUIRED TO SUPPORT A STEP BY STEP PROCEDURE OF HOW THE CERTIFICATION PROCESS WILL BE ACCOMPLISHED; 009-09 PHRASEOLOGY SHALL 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

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009-90        TECHNICAL REPRESENTATIVE; PROVIDE

NOTE:        GENERALLY TECHNICAL SUPPORT SHOULD BE PROVIDED BY THE SUPERVISOR. THE TECHNICAL REPRESENTATIVE SHOULD 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 SHALL 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

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009-91 PROPELLER IN-PLACE INSPECTION; ACCOMPLISH

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

A91

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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

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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

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009-96 BALL VALVE; REPAIR

NOTE: A96b AND A96c SHALL BE SUBPARAGRAPHS TO A96a.

FOR SHOP REPAIR AND TEST.

TEST MEDIUM AND TEST PRESSURE FOR SEAT TIGHTNESS SHALL  
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

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009-104 VIBRATION TESTING AND ANALYSIS; ACCOMPLISH

Accomplish the requirements of 009-104 of 2.1.

A104

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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 shall be \_\_\_\_\_, using the \_\_\_\_\_ spray process.

A105

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

NOTE: THIS STANDARD SHALL BE USED WHEN PIPING SYSTEM CLEANLINESS IS LOST. WHEN PRACTICAL, SHIPBOARD CLEANING SHALL BE MINIMIZED OR ELIMINATED BY COMPONENT AND SUBASSEMBLY CLEANING AFTER FABRICATION AND BEFORE INSTALLATION ABOARD SHIP. PLANNER SHALL 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 SHALL BE A SUBPARAGRAPH TO A107a. PLANNER SHALL SPECIFY CLEANLINESS LEVEL II OR LEVEL III AS IDENTIFIED IN SECTION 505j2. OF GSO FOR PIPING SYSTEM BEING CLEANED.

Ensure General Cleaning shall be Level \_\_\_\_.

A107b

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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

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009-114 MOLD REMEDIATION; ACCOMPLISH

Accomplish the requirements of 009-114 of 2.1.

A114

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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

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

Accomplish the requirements of 009-116 of 2.1 for \_\_\_\_.

A116

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009-121 SHIP ASSESSMENT/INSPECTION; ACCOMPLISH

NOTE: SUPPORT SHOULD BE PROVIDED BY THE SUPERVISOR. THE TECHNICAL REPRESENTATIVE SHOULD 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 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.

Accomplish the requirements of 009-121 of 2.1 for \_\_\_\_\_.

A121a

Accomplish the requirements of 009-121 of 2.1.

A121b

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

Accomplish the requirements of 009-123 of 2.1 for \_\_\_\_\_.

A123

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STANDARD PHRASEOLOGY

SECTION B

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

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

Remove and install \_\_\_\_\_ as interferences where required.

B2

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Accomplish a static load test of the \_\_\_\_\_. A test load of \_\_\_\_ pounds shall 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

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B4 Systems and Specifications, SSPC Painting Manual, Volume 2

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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 SHALL BE FREE OF VISIBLE RESIDUES AND THE REMAINDER SHALL 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 SHALL BE FREE OF VISIBLE RESIDUES AND THE REMAINDER SHALL 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

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

B6

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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



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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 SHALL 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 shall conform to 2.\_\_\_\_.

B17a

Ship crated material prepaid to and from: \_\_\_\_\_.

B17b

NOTE: B17d SHALL 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 shall 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 SHALL 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 shall conform to 2.\_\_\_\_.

B20a

Ship crated material to:

B20b

NOTE: B20d SHALL 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

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

B20e

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 shall be equal to that used for the equipment provided by the Government. Crated equipment shall be turned in to the SUPERVISOR within 10 days after removal.

B20g

Crate and ship \_\_\_\_\_ prepaid to and from the following \_\_\_\_\_ for \_\_\_\_\_:

B20i

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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

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NOTE:        B15a SHALL BE A SUBPARAGRAPH TO B22.

Accomplish a joint visual inspection with the SUPERVISOR of each \_\_\_\_\_ listed in \_\_\_\_\_ for structural integrity, deterioration, pitting, cracks, and areas of damage or distortion, and to determine required repairs.

B22

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NOTE:        B25b SHALL 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 \_\_\_\_\_ tests 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

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NOTE:        B26b SHALL 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 \_\_\_\_\_ tests on \_\_\_\_\_ in accordance with 2.\_\_\_ . The accept or reject criteria shall 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

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Remove and dispose of \_\_\_\_\_ from the \_\_\_\_\_.

B27

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Remove existing and install new \_\_\_\_\_.

B28

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NOTE: B30 SHALL BE USED WHEN LISTING MULTIPLE PARTS, SUCH AS THOSE IDENTIFIED IN DRAWINGS AND TECHNICAL MANUALS

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

TOTAL QUANTITY <u>REQUIRED OF PART</u>	NAME	PIECE NO.	REF. NO.	FIGURE/ <u>DRAWING NO.</u>	PART NO.
--	------	--------------	-------------	-------------------------------	-------------

B30

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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 manufacturer's instructions supplied with equipment.

B33

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

B34a

Accomplish the requirements of 2.\_\_ for each \_\_\_\_\_.

B34b

NOTE: B34d SHALL BE A SUBPARAGRAPH TO B34c.

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

B34c

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

B34d

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NOTE:        THIS SEGMENT SHALL 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

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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

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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

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Remove and dispose of system fluids from the equipment listed in \_\_\_\_.

B39

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Obtain the services of a \_\_\_\_\_ engineer to provide engineering assistance to \_\_\_\_\_.

B40

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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

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NOTE:            B44b-B44d SHALL 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 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 Section 8 of 2.\_\_\_.

B44c

Install a new CRES identification tag on each flexible hose assembly engraved in accordance with Paragraph 8.5 of 2.\_\_\_\_.

B44d

Install **each** new hose **assembly** in accordance with Section 9 of 2.\_\_\_\_.

B44e

NOTE: B44g SHALL BE A SUBPARAGRAPH TO B44f.

USE WHEN NEW FITTINGS ARE UNAVAILABLE.

Reuse **each** existing flexible hose end fitting where identified acceptable after inspection in accordance with Section 6, Paragraph 6.2 of 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

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

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

B45

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NOTE: DOLLAR AMOUNTS SHALL 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

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

B49

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NOTE: B50 IS INTENDED FOR, BUT NOT LIMITED TO, USE AS A SUBPARAGRAPH TO A13a, A14a, A16, A36, AND A75.

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. |

B50

***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***

Accomplish additional repairs to tanks listed in 1.2, using the unused balance of per ***each*** tank repair listed in \_\_\_\_\_ through \_\_\_\_\_ when authorized by the SUPERVISOR.

B51

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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.\_\_, in location listed 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

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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](mailto: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.

D1

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**Chip and grind each surface flush in way of \_\_\_\_\_.**

**D1a**

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

D2

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

D3a

Inspect each tank for cleanliness prior to final closing.

D3b

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Phrase deleted (See A25f)

D4

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

D5

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NOTE: UTILIZE FOR COMPARTMENTATION MARKINGS. FOR REFERENCE USE FED-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

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

D11a

Provide samples for color, style, and pattern selection.

D11b

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

D12

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

D13

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

D14

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Accomplish a visual inspection of each \_\_\_\_\_ listed in 1.3.\_\_\_\_ for structural integrity, deterioration, pitting, cracks, and areas of damage or distortion in each location listed in 1.2.

D16a

Accomplish a visual inspection of each tank listed in 1.2 for existing preservation coating, structural integrity, deterioration, pitting, cracks, and areas of damage or distortion, including sounding tubes, tank vents, overflows, piping, structural members, and manhole covers.

D16b

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Shop test each new wire rope, including **each** attached end fitting, to 40

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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

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

D21a

Remove each temporary closure upon completion of work.

D21b

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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

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Vee-out and weld \_\_\_\_ linear feet of **each** deteriorated and damaged weld. **Each** area of repair shall include deck, bulkhead, shell plating, and overhead of each space listed in 1.2 for total of \_\_\_\_ linear feet per space.

D24

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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

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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

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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 shall be templated to suit existing shipboard conditions and offset around interferences not feasible to relocate.

D30b

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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 each modified portion of existing systems to ensure minimum delivery of designed air quantities in accordance with 2.\_\_\_\_.

D31a

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

D32

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***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

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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 spaces, engine room, machinery, equipment, valves, vent system, and other openings prior to cleaning operation.

E2

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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

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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

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

E6

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Straighten each \_\_\_\_\_ to within \_\_\_\_\_ inch total indicator reading.

E7

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Straighten each shaft to within \_\_\_\_\_ inch total indicator reading.

E8

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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

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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 conditions.

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

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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 shall not bind and clearance shall 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 SHALL 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 shall 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 shall 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 shall 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 shall 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 tools.

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, stud, bolt, and nut. Material shall 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 not allowed.

E30a

Rotate shaft by hand one complete revolution. Binding or rubbing 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 and fastener. **Each** gasket shall conform to Graph Lock 3125SS/Graftech sheet gasket.

E34

---

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

Remove each existing and install new steam piping joint gasket and fastener. **Each** gasket shall conform to MIL-G-24716.

E35

---

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

Remove each existing and install new steam piping joint gasket and fastener. Gaskets shall conform to MIL-G-24716.

E36

---

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

Remove each existing and install new feedwater piping joint gasket and fastener. Gaskets shall conform 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 each existing and install new fresh water piping joint gasket and fastener. Gaskets shall conform to \_\_\_\_, \_\_\_\_, \_\_\_\_.

E39

---

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

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

E41



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

Remove each existing and install new fuel oil piping joint gasket and fastener. Gaskets shall conform to MIL-G-24716.

E42

---

NOTE: FOR DIESEL FUEL OIL 200 PSIG.

Remove each existing and install new fuel oil piping joint gasket and fastener. Gaskets shall conform to MIL-G-24716.

E43a

---

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

Remove each existing and install new fuel oil piping joint gasket and fastener. Gaskets shall conform 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 each existing and install new lubricating oil piping joint gasket and fastener. Gaskets shall conform to \_\_, \_\_, \_\_.

E44

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

Remove each existing and install new lubricating oil piping joint gasket and fastener. Gaskets shall conform 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 - SHALL 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 SHALL NOT BE USED ON BOILER BLOWDOWN AND DISCHARGE PIPING.

Remove each existing and install new gasket and fastener. Gaskets shall conform to \_\_ , \_\_ , \_\_ .

E51

---

NOTE:        INVOKE APPLICABLE 009-12 REQUIREMENTS.

Weld build-up the **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 SHALL 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 dowels 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 shall 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 **each** keyway in each new coupling and fit **each** new key 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, shall 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 shall 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.

E74

---

Clear each gage line and fitting free of foreign matter and obstructions.

E75

---

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.

E77

---

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 shall 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 shall 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 shall 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 shall 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 shall 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 5-7 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 REINSTALL -  
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. |

F15a

NOTE:            KNOWN TO BE A REQUIREMENT ON CG-47 CLASS.

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. |

F15b

NOTE: FOR REFERENCE USE MIL-STD-1310, SHIPBOARD BONDING, GROUNDING, AND OTHER TECHNIQUES FOR ELECTROMAGNETIC COMPATIBILITY AND SAFETY.

BOND STRAP FABRICATION AND INSTALLATION SHALL 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 shall 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

---

Install and connect \_\_\_\_\_, installing new **each** fastener. |

F37a

Install and connect \_\_\_\_\_, installing new **each** fastener. |

F37b

---

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 shall be supported independently and shall not impose a strain.

G9a

Align the piping to each \_\_\_\_\_. Piping shall be supported independently and shall 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).

Ensure **each** new material 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 \_\_\_\_\_ and new **each** fastener 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 and fastener 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

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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 shall 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