

NAVSEA
STANDARD ITEM

FY-19

ITEM NO:	009-24
DATE:	01 OCT 2017
CATEGORY:	I

1. SCOPE:

1.1 Title: Authorization, Control, Isolation, Blanking, Tagging, and Cleanliness; accomplish

2. REFERENCES:

- 2.1 Standard Items
- 2.2 Joint Fleet Maintenance Manual (JFMM)
- 2.3 9002-AK-CCM-010/6010, Industrial Ship Safety Manual (ISSM) for Submarines
- 2.4 S0400-AD-URM-010/TUM, Tag-Out User's Manual
- 2.5 29 CFR Part 1915, Occupational Safety and Health Standards for Shipyard Employment
- 2.6 S9AAO-AB-GOS-010, General Specifications for Overhaul of Surface Ships (GSO)
- 2.7 0902-018-2010, General Specifications for Deep Diving SSBN/SSN Submarines
- 2.8 S9086-RK-STM-010/CH-505, Shipboard Piping Systems
- 2.9 845-4612172, Hydrostatic Test Blanks
- 2.10 MIL-STD-777, Schedule of Piping, Valves, Fittings, and Associated Piping Components for Naval Surface Ships
- 2.11 802-5959353, MIL-STD-777D Modified for DDG-51 Class, Schedule of Piping, Valves, Fittings, and Associated Piping Components
- 2.12 S9074-AR-GIB-010/278, Requirements for Fabrication Welding and Inspection, and Casting Inspection and Repair for Machinery, Piping, and Pressure Vessels

3. REQUIREMENTS:

3.1 Accomplish the Work Authorization requirements of Volume IV, Chapter 10 of 2.2 for all non-nuclear work performed shipboard during Chief of

Naval Operations (CNO) Availabilities, Continuous Maintenance Availabilities (CMAV), Window of Opportunity (WOO), or Emergent Maintenance (EM) Availabilities. Ensure all work on ship's systems and components is properly authorized and controlled in order to ensure rigorous personnel and ship safety standards are met. Include work such as planned maintenance, troubleshooting, corrective maintenance, and modernization and assessments.

3.1.1 Ensure all outside activity work (non-Ship's Force) on ship's systems and components, regardless of who performs the work, is formally authorized through a Work Authorization Form (WAF) completed and processed in accordance with Volume IV, Chapter 10 (including Appendix A) of 2.2. A copy of the authorized WAF shall be maintained at the worksite during productive work.

3.1.2 For submarines only, accomplish the Work Authorization requirements of Volume IV, Chapter 10 of 2.2 for safety of ship maintenance item identification, listing, and control, or the requirements of 2.3 for Ship's Plan of the Day (SPOD).

3.1.3 Maintain the WAF in the Work Authorization Log from the time of original authorization, through production work and testing, and until the WAF is formally closed out. When notified by the cognizant Repair Activity's (RA) designated representative that the work is complete and ready for tags to be cleared, the RA's designated representative will sign the WAF work completion block, then obtain ship's concurrence to clear the associated Tagout Record Sheet line item(s). Additional sign-offs required by the WAF for testing and closure shall be made as work progresses in accordance with Volume IV, Chapter 10 of 2.2.

3.1.4 When a WAF Coordinator (WAFCOR) is required in accordance with 009-106 of 2.1, all repair activities participating in the availability shall submit properly prepared WAFs to the Lead Maintenance Activity (LMA) WAFCOR for processing.

3.1.4.1 The Repair Activity (RA) responsible for the work shall **accomplish the requirements of 2.4 and** complete blocks 1, 2, and 4 through 10 of the WAF and submit to the WAFCOR.

3.1.4.2 The WAFCOR shall obtain the appropriate WAF serial number from the Ship's Force WAF Log and enter it into block 3 of the WAF. The WAFCOR shall then submit the WAF to the ship's Watch/Duty Officer for processing blocks 11 through 14. The WAFCOR will sign block 12 for **concurrence to start work.** |

3.1.4.3 **The RA responsible for the work shall sign Block 14 in conjunction with the Ship's Watch/Duty Officer.**

3.1.4.4 The WAFCOR will issue a copy of the authorized WAF to the Repair Activity indicating authorization to begin work.

3.1.4.5 When work is complete, the RA will complete blocks 15 and 16 of the WAF in accordance with Volume IV, Chapter 10, Appendix A instructions of 2.2.

3.1.4.6 When all work and testing are completed, block 18 shall first be signed by the WAFCOR and then the SF Watch/Duty Officer shall be the final signature in block 18 to close the WAF.

3.2 Accomplish the requirements of 2.4 for equipment, systems, circuits, components, tanks, voids, piping, and valves that require isolation.

3.2.1 Ensure the isolation, de-energization, drainage of the isolated area, and depressurization of mechanical, electrical, electronics, and pressure system has been accomplished.

3.2.2 Train and qualify contractor's designated representative in the WAF and Tag-Out process in accordance with 2.2 and 2.4.

3.2.2.1 Maintain a current copy of the plan utilized to train and qualify contractor's designated representatives in accordance with 2.2 and 2.4 for reference by the SUPERVISOR.

3.2.2.2 Notify the SUPERVISOR of revisions to the plan as they occur.

3.3 Accomplish the requirements of the contractor's lockout/tags-plus program for unmanned craft and barges in accordance with 2.5.

3.3.1 Submit one legible copy, in hard copy or approved transferrable media, of contractor's lockout/tags-plus program to the SUPERVISOR when requested.

3.3.2 Position equipment to achieve required isolation, by de-energizing, draining of the isolated area, and depressurization, and use lockout/tags-plus program when lock-out of equipment, systems, circuits, components, piping, or valves is required in accordance with 2.5.

3.4 Post warning signs and barriers and install temporary positive means to prevent closure or movement of components that create a safety hazard at hull and deck openings.

3.5 **Complete** and maintain a written record by work item using Attachment A (Accountability of Temporary Blanks and Plugs Check-Off Sheet), verifying installation and removal of temporary blanks/plugs used for Foreign Material Exclusion (FME), isolation of pressure boundaries, or hydrostatic testing. **Location information shall** include **the** associated system/equipment name or tank number; frame, port or starboard, below or above water line. |

3.5.1 Ensure the Accountability of Temporary Blanks and Plugs Check-Off Sheet (Attachment A) is at all tank closings; ensure the removal of blanks/plugs in tanks are verified and documented via signature on the check-

off sheet by Ship's Force representative and the SUPERVISOR prior to tank closing.

3.5.1.1 Submit one legible copy, in hard copy or transferable media, of the Accountability of Temporary Blanks and Plugs Check-Off Sheet (Attachment A) to the SUPERVISOR upon each satisfactory tank closing to document blanks/plugs were removed.

3.5.2 Maintain the Accountability of Temporary Blanks and Plugs Check-Off Sheet (Attachment A) for the duration of the availability.

3.5.2.1 Maintaining the Accountability of Temporary Blanks and Plugs Check-Off Sheet (Attachment A) for material that has been removed from the ship is not required; however that material must be entered in the Accountability of Temporary Blanks and Plugs Check-Off Sheet (Attachment A) when material is returned to the ship.

3.5.3 Submit one legible copy, in hard copy or approved transferrable media, of the completed Attachment A to the SUPERVISOR at the end of the availability.

3.6 Install identification tags on each removed piping section, valve, ventilation system, and equipment to indicate company name, ship's name, hull number, system, location, and Work Item number prior to removal from system. Tags must endure the repair process, and must stay attached and be readable until the removed piping section, valve, ventilation system, or equipment is reinstalled.

3.6.1 Include quantity when components are grouped/bagged/comingled together in a bucket or any other type of storage having only one identification tag.

3.6.2 Ensure FME is maintained on equipment removed from the ship.

3.7 Install and maintain blanks/plugs, nuts and bolts, painted blaze orange for use as FME immediately upon openings in equipment, valves, and piping systems not subject to pressure to prevent entry of foreign material and protect flanges and threaded areas. Existing system fasteners used for blanking that will be reused for installation are excluded from the requirement for blaze orange color. FME may be used for systems normally under pressure but are tagged-out for maintenance. The use of cloth, polyvinyl sheet, paper, tape, and rubber sheeting as FME is prohibited. All FME material must be applied with care, without using excessive force, to avoid damage to surfaces/components being protected.

3.7.1 Wood products, including damage control (DC) plugs are permitted for use as FME external to the ship for hull penetrations not in immediate vicinity of the flight deck. Wood products, including DC plugs, may be used as FME internal to the ship in piping and ventilation systems where permitted explicitly in the applicable Naval Ship's Technical Manual. DC plugs, wood, or wood products are prohibited for use in tanks/voids.

3.7.2 Piping, ventilation, and equipment components designated as scrap prior to removal do not need to be blanked to maintain cleanliness; however, they shall be properly marked as scrap material prior to removal. Precautions shall be taken to preclude spillage of system contents.

3.8 Maintain the cleanliness of new, modified, repaired and disturbed non-nuclear piping systems and components of nuclear and non-nuclear powered naval vessels in accordance with 2.6 through 2.8. Cleanliness levels shall be as assigned in 2.6.

3.8.1 Maintain cleanliness at the following acceptance standard:

3.8.1.1 Cleanliness Level II: Surface shall be visually free of grease, oil, flux, scale, dirt, loose particles and any other contamination foreign to the base metal. Tap water residues on all metals and light superficial rust on carbon steel surfaces, caused by short time exposure to the atmosphere, are permitted. Light dust on cleaned surfaces is not objectionable, provided that the quantity and size of the particle does not adversely affect system operations.

3.8.1.2 Cleanliness Level III: Surface shall be reasonably free of contamination and any remaining residue on the surface does not interfere with system operations or damage system components.

3.8.2 Re-establishing local cleanliness status: Local cleaning is permitted in accordance with 505j4 of 2.6. If existing system cleanliness has been lost in a localized area (such as metal shavings deposited in a pipeline while removing a section for replacement), cleanliness condition can be re-established by locally swabbing, wiping, vacuuming, etc. the area to meet the cleanliness requirements of 505j2 of 2.6. Local cleaning is limited to piping sections which can be accessed directly and the results of cleaning fully observed without the aid of borescopes, mirrors or other devices.

(V) "VERIFY CLEANLINESS"

3.8.3 Verify that existing cleanliness was maintained.

3.8.4 Submit one legible copy, in approved transferrable media, of a report identifying any location where cleanliness has not been maintained in accordance with 3.8.1 and cannot be restored by local cleaning in accordance with 3.8.2. Include the cause of system contamination and recommended actions for cleanliness recovery.

3.9 Install and maintain blanks/plugs, nuts and bolts, colored blaze orange that will be used for hydrostatic testing on equipment, valves, and piping systems in accordance with 2.9 to withstand maximum system pressure for systems which will serve as the primary or secondary barrier to support hydrostatic testing. Existing system fasteners used for blanking that will be reused for installation are excluded from the requirement for blaze orange color. Secure blanks in place with gaskets and fasteners in accordance with 2.10 and 2.11, or weld in place. Ensure welding requirements for blanks meet the same requirement as the piping welds, in accordance with 2.8, 2.12, and

009-12 of 2.1. The use of cloth, polyvinyl sheet, paper, tape, and rubber sheeting as blanks is prohibited. DC plugs, wood, or wood products are prohibited as blanks on pressurized systems, but may be used on non-pressurized systems to include gravity drain piping.

3.9.1 Ensure pressure blanks have a positive means of attachment for affixing tags. Tags must endure the repair process, and must stay attached and be readable until the blanks are removed. Include company/contractor name, Work Item number, WAF number, Contractor blanking/plugging log entry number, along with system/equipment/component name, number, and location.

3.10 Ensure blanks, plugs or cable end protection installed is removed and system/equipment is restored as soon as possible after completion of work. Ensure all tag-out requirements of 2.4 are followed.

4. NOTES:

4.1 JFMM (2.2), 6010 (2.3), and TUM (2.4) are available on-line at:
<https://www.submepp.csd.disa.mil/jfmm/index.htm>

4.2 FME is used to maintain system cleanliness. Accomplishment of NSI 009-107 of 2.1 **will be invoked within the Work Item** to restore cleanliness, when lost or suspected of being lost. |

4.3 General piping system cleanliness is addressed in Section 505 of 2.6.

4.4 Cleaning requirements for specific systems are addressed in individual sections of 2.6 and 2.7.

4.5 The Lead Maintenance Activity (LMA) is defined in 2.2. MSRA/ABR contractors tasked with availability schedule management under 009-60/009-111 of 2.1 are considered the LMA.

4.6 MSRA/ABR contractors fulfilling the role of Lead Maintenance Activity under 2.2, or tasked with availability schedule managements under 009-60/009-111 of 2.1 are not "component contractors" and are responsible for the full scope of Repair Activity obligations under Volume IV, Chapter 10, of 2.2.

4.7 Worksite is defined as within the specific compartment or space where physical productive work is occurring. For tanks and voids, the WAF may be posted at the entry point of the space.

