

Work Instruction No.: 305

Lockout, Tagout, and TagPlus Procedures

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1.0 Purpose:

This work instruction establishes the minimum requirements for the installation of energy isolating devices. It is followed to ensure that any machine, equipment, circuits, or piping on which employees are to work is isolated from all potentially hazardous energy sources and appropriately tagged or locked out.

2.0 Scope:

This policy applies to:

- All NASSCO employees, working on and off site
- Subcontractors and team members working on site.

3.0 References:

- (a) Naval Sea Systems Training (NAVSEA) Standard Item 009-24, Tags/Blanks
- (b) FED-OSHA, Section 1910.147 The Control of Hazardous (Lockout/Tagout) - Inspection Procedures and Interpretive Guidance
- (c) FED-OSHA, Section 1915, Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment
- (d) Cal-OSHA, General Safety Order, Section 3314, Cleaning, Repairing, Servicing and Adjusting Prime Movers, Machinery and Equipment
- (e) Federal Register Vol. 76, No 94, Part II, Dept of Labor, OSHA 29 CFR Part 1915, General Working Conditions in Shipyard Environment
- (f) FED-OSHA, Section 1915.89, Subpart F General Working Conditions, Control of Hazardous Energy (Lockout/Tags-Plus)
- (g) NASSCO Test & Trials Manual, Work Instruction 103, Electrical and Mechanical Tag Out Program

4.0 Definitions:

- 4.1 Affected employee -- a properly trained employee whose job requires him/her to operate machinery on which servicing or maintenance is being performed under lockout or tagout and whose job requires him/her to work in an area in which such servicing or maintenance is being performed.
- 4.2 Authorized employee -- an employee who locks out or tags out machinery in order to perform service or maintenance. An affected employee becomes an authorized employee when that employee's duties include performing service or maintenance covered under this Work Instruction. A Primary Authorized employee is responsible for group tagouts and is on the authorized list in the Lockout/Tagout Log.

- 4.3 Authorized NASSCO Supervisor -- the immediate superior of an authorized employee trained in Lockout/Tagout and is listed in the Lockout/Tagout Log
- 4.4 Lockout -- when a valve, switch, or other energy-controlling device is locked in the 'OFF'/shut position using a lock with a tag.
- 4.5 Tagout -- when a valve, switch, or other energy-controlling device is tagged in a position using only a tag.
- 4.6 TagPlus -- is when a valve, switch or other energy-controlling device is tagged in position plus a device that prohibits inadvertent movement is used. This device does not contain a lock.
- 4.7 Tagout/Tagplus Coordinator – A person whose job is to oversee and approve Lockouts/Tagouts, verification of hazardous energy isolation before servicing equipment and removal of each lockout/tagout.
- 4.8 Group Tagout – When more than one authorized employee services the same machinery, equipment or system at the same time, a group tagout sheet shall be added to tagout to ensure all employees are notified of the hazardous condition.

5.0 Responsibility:

- 5.1 It is the responsibility of the Maintenance, Production, and Repair Supervisors to see that this procedure is implemented and that the necessary keys, locks, blocking devices and tags are obtained and other arrangements are made. Supervisors are to insure that affected employees are aware of hazards involved in their work activity and precautions involved to minimize hazards.
- 5.2 The Maintenance department shall be responsible for scheduling and conducting annual audits of the Maintenance Lockout/Tagout program in accordance with this work instruction.
- 5.3 The Maintenance department shall be responsible for maintaining records of all Maintenance Lockout/Tagout audits.
- 5.4 Test and Trials department shall be responsible for scheduling and conducting annual audits of the Test and Trials Lockout/Tagout program in accordance with Reference (g) NASSCO Test and Trials Manual, Work Instruction 103 Electrical and Mechanical Tagout Program.
- 5.5 Test and Trials shall be responsible for maintaining records of all Test and Trials Lockout/Tagout Audit.
- 5.6 The safety department shall be responsible for maintaining Lockout, Tagout, and TagPlus related incident reports and corrective actions.
- 5.7 It is the responsibility of all employees, subcontractors and team members to adhere to this procedure.

6.0 Procedure:

6.1 Training and Communications

- 6.1.1 Employees are trained to ensure that the purpose and function of the energy control program is understood. The training includes the aspects in Sections 6.1.2 through 6.1.8 below.
- 6.1.2 Each authorized employee receives annual training in recognition of applicable hazardous energy sources, the type and magnitude of the energy available, and the methods and means necessary for energy isolation and control.
- 6.1.3 Each affected employee is instructed on the purpose and use of the energy control procedure.
- 6.1.4 All other employees whose work operations are or may be in any area where energy control procedures may be utilized are instructed about the procedures, and about the prohibition of attempts to restart or re-energize machines or equipment which are tagged out.
- 6.1.5 Each new or transferred affected employee and other employees whose work operations are in the area are instructed in the purpose of the tagout procedures.
- 6.1.6 Re-training is provided for all authorized and affected employees whenever there is a change in their job assignments, or when there is a change in the energy control procedures. The re-training reestablishes employee proficiency and introduces new or revised control methods and procedures as necessary.
- 6.1.7 The documentation of training contains each employee's name, badge number, dates of training, and who conducted the training. A copy of this training documentation is kept on file by the Department conducting the training until replaced with follow-up training documentation.
- 6.1.8 All NASSCO employees who may be required to use the system are properly trained and familiar with the procedures. Failure to adhere to this procedure subjects the employee to disciplinary action and/or immediate discharge.

6.2 General Requirements

- 6.2.1 Requirements of this section apply to all situations concerning installation of tags and energy-isolating devices.
- 6.2.2 Only the originator of the tagout removes the tag and or lock, unless the originator authorizes another person in writing to remove the tag. However, an Authorized Supervisor may remove the tag in the absence of an employee once all reasonable efforts have been made to contact the employee to inform them that the tag will be removed. The employee will be notified of the removal of the tag before they resume work.

- 6.2.3 The means of tag attachment are non-reusable, attachable by hand, self-locking, and non-releasable, with a minimum unlocking strength of no less than fifty pounds. All sources of energy (hydraulic, electric, pneumatic, steam, mechanical, etc.) are released and tagged out and the equipment to be worked on is tagged out.
- 6.2.4 When equipment accommodates a lock, each person involved with a lockout of system removes only his/ her personalized lock. Locks must be substantial to prevent removal except by excessive force of special tools such as bolt cutters or other metal cutting tools.
- 6.2.5 In cases where facilities equipment and breakers do not accommodate locks, the switch is opened, wires are disconnected and taped, and a tag attached meeting the requirements of 6.2.3.
- 6.2.6 Each tag has the name of the originator, the employee's contact information, and the date the circuit or equipment was tagged out.
- 6.2.7 The employee placing the tag and /or lock has knowledge of equipment energy and related hazards. General steps for tagout are as follows:
 - 1. Identifies valves or switches to isolate energy and related hazards
 - 2. Test for power and energy
 - 3. Alert others in area to the tagout procedure
 - 4. Secure power
 - 5. Locate and isolate all energy sources
 - 6. Release stored energy
 - 7. Attach tag and /or lock
 - 8. Test controls for power and energy
 - 9. Perform work
 - 10. Remove tag following applicable procedures
- 6.2.8 Group tagouts are initiated by the Primary Authorized Employee and require a separate tagout log sheet to document each employee working on a tagged out system/component.
- 6.3 **Procedures On Board U.S. Navy Repair Ships: Navy Tagout**
 - 6.3.1 U.S. Navy ships are not equipped to permit the physical lockout of an electrical/mechanical circuit or system. The U.S. Navy system instead relies solely on a Tagout program. This procedure covers all isolation, blanking and tagging requirements while working on U.S. Naval vessels as per reference (a).
 - 6.3.1.1 The designated NASSCO Supervisor or primary authorized employee notifies, in writing, the Commanding Officer's representative of equipment and systems that require isolation to accomplish work. Before any work is started, tagouts can be accomplished as required by ship's instructions.

- 6.3.1.2 The Ship's Force personnel will position equipment and install tags when tagout of a system, piping, or circuit is required.
- 6.3.1.3 The designated NASSCO Supervisor or primary authorized employee verifies the use of sufficient tags to prevent operation of a system or component from all stations that could exercise control.
- 6.3.1.4 The designated NASSCO Supervisor or primary authorized employee signs the ship's tagout record sheet and the tags after installation, indicating repair activity satisfaction with the completeness of the tagout, and alerts personnel removing tags that NASSCO concurrence is required. They will write "NASSCO" on the tag.
- 6.3.1.5 The designated NASSCO Supervisor or primary authorized employee posts warning signs and barriers and installs temporary positive means to prevent closure or movement of components that create a safety hazard at hull and deck openings.
- 6.3.1.6 The designated NASSCO Supervisor or authorized employee installs blanks on piping, valves, equipment, and components being stored, installed, or removed, and on openings aboard ship resulting from the removals. The use of cloth, polyvinyl sheet, paper, and tape as blanks is prohibited.
- 6.3.1.7 Blanks on equipment, valves, and pipe openings in systems which are subject to pressure are installed to withstand maximum systems pressure, and secured in place with gaskets and fasteners in accordance with reference (a).
- 6.3.1.8 The designated NASSCO Supervisor or authorized employee installs blanks on openings in equipment, valves, and piping systems not subject to pressure that are adequate to preclude entry of foreign material and to protect flanges and threaded areas.
- 6.3.1.9 The designated NASSCO Supervisor or authorized employee removes blanks installed in accordance with Section 6.4.1.6 prior to installing piping, valves, or equipment.
- 6.3.1.10 The designated NASSCO Supervisor or authorized employee tapes and insulates cable ends disconnected from equipment to prevent contact, shorting out or grounding in the event a system is accidentally energized.
- 6.3.1.11 Any switch, fitting, valve, or other equipment affixed with a ship's isolation or DANGER tag is not disturbed, modified, removed, energize, or operated without concurrence of the Commanding Officer's designated representative.
- 6.3.1.12 Ship's isolation or DANGER tags are not removed or relocated without concurrence of the Commanding Officer's representative.
- 6.3.1.13 The designated NASSCO Supervisor or primary authorized employee notifies the Commanding Officer's designated representative immediately when NASSCO work is complete and the system, piping, or circuit is ready for activation to accomplish removal of tags.

- 6.3.1.14 The designated NASSCO Supervisor or authorized employee installs blanks, and verifies removal and clearance of DANGER or isolation tags in accordance with ship's instruction before the equipment is operationally tested or operated.
- 6.3.1.15 The designated NASSCO Supervisor or primary authorized employee signs the ship's tagout log sheet to show concurrence in tag removal and clearance before removal.
- 6.3.1.16 The Ship's Force personnel will remove tags after NASSCO's concurrence and clearance has been recorded and the Commanding Officer's designated representative authorizes removal.
- 6.3.1.17 When a component is tagged more than once, a DANGER tag takes precedence over all other tags.
- 6.3.1.18 Test all electrical circuits or equipment with a reliable test meter prior to each time work is to be performed.
- 6.3.1.19 ***Do not ever work under someone else's tagout or lockout. Put your own Tagout/lock on that circuit/system.***
- 6.4 **General Lockout/Tagout for Piers and Facilities used by Temporary Services and Maintenance.**
 - 6.4.1 Only locks from a reputable lock company are used. No two locks are keyed the same.
 - 6.4.2 Each lock is issued to a particular employee.
 - 6.4.3 Only one key is issued to each employee for each lock. The supervisor retains the second key to each lock in their office and in no instance do they lend this key to any other employee.
 - 6.4.4 If multiple lockout systems are not available, special tongues capable of holding several locks are used.
 - 6.4.5 All sources of power, (hydraulic, electric, pneumatic, steam, mechanical, etc.) and equipment to be worked on are tagged out and locked out.
 - 6.4.6 Only qualified electricians/maintenance personnel are authorized to lockout/tagout any circuit using the Danger Tag. (Attachment1)
 - 6.4.7 When required, the system and equipment are locked and tagged using personalized locks and a Danger Tag.
 - 6.4.8 Lockout procedure is used when more than one trade is involved. Each person must use their personalized lock unless the following conditions apply:
 - 6.4.8.1 When more than one person working for a single Supervisor is assigned to work on a circuit requiring a lockout, the following procedure outlined in Sections 6.4.8.2 through 6.4.8.7 will be followed. This procedure will also apply if the Supervisor is responsible for more than one trade.

- 6.4.8.2 The designated person will lockout the circuit following the standard procedure placing a lock and tag in the proper place.
- 6.4.8.3 An additional group Tagout sheet listing all authorized employees working on the circuit, will be signed by each authorized employee and will be attached to the Tagout sheet.
- 6.4.8.4 Each employee working on the circuit will sign the group tag sheet confirming their name and badge number.
- 6.4.8.5 If work on the same circuit is to be carried on by employees of the next shift the appropriate crew supervisor for the next shift will follow the above procedure and sign a group tagout sheet after previous shift employees sign out on the group Tagout sheet.
- 6.4.8.6 When employees complete work and before the lockout and tagout is removed, all employees' listed shall sign the group tag acknowledging that they are no longer working under the tagged out/locked out conditions.
- 6.4.8.7 The lock and Tagout tag shall be removed only after all employees have signed the group Tagout sheet. However, an Authorized Salaried Supervisor may sign the group tag in the absence of an employee once all reasonable efforts have been made to contact the employee to inform them that the lockout/tagout will be removed.
- 6.4.8.8 The employee will be notified of the removal of the lock/tag before they resume work. Only the originator of the tagout removes the tag. The originator can authorize another person in writing to remove the tag.

6.5 Program Audits

- 6.5.1 An audit of the lockout/tags-plus program and procedures shall be conducted at least annually to ensure the procedures and requirements are being followed and to correct any deficiencies.
- 6.5.2 Audits are to be performed by an authorized employee other than the person performing the work or individuals knowledgeable of the lockout/tags plus program and procedures and the machinery, equipment, or systems being audited.
- 6.5.3 The audit shall include the following elements:
 - 6.5.3.1 A review of the written lockout/tags-plus program and procedures;
 - 6.5.3.2 A review and verification of the current lockout/tags-plus log;
 - 6.5.3.3 A review of Lockout/Tagout and TagPlus related incident reports since the last audit. This review shall be managed and maintained by the safety department and communicated to the auditor upon request.
 - 6.5.3.4 A review conducted between the auditor and authorized employees regarding the authorized employees' responsibilities under the lockout systems or tags-plus systems being audited.

- 6.5.4 Audit reports shall be completed within 15 days after completion of the audit and the report shall include at least:
 - 6.5.4.1 The date of the audit;
 - 6.5.4.2 The name and badge of the auditor;
 - 6.5.4.3 The identity of the procedure and machinery, equipment, or system that were audited;
 - 6.5.4.4 The findings of the program audit and recommendations for correcting deviations or deficiencies identified during the audit;
 - 6.5.4.5 Lockout, Tagout, and TagPlus related incident investigation reports since the previous audit; and descriptions of corrective actions that have been taken since the previous audit. The safety department shall maintain all Lockout, Tagout and TagPlus related investigation reports and corrective action documentation. This information shall be provided to the auditor upon request.
- 6.5.5 Findings and recommendations shall be given to employees having a job task that may be affected by such findings and recommendations.
- 6.5.6 Corrections shall be made within 15 days after receiving the written audit report.

7.0 Attachments:

Attachment 1 - Sample Danger tag

Attachment 2- Sample Maintenance Tag

Attachment 1 -- Sample Danger tag

SYSTEM / COMPONENT / IDENTIFICATION		DATE / TIME
POSITION OR CONDITION OF ITEM TAGGED		
DANGER DO NOT OPERATE		
SERIAL NO.	SIGNATURE OF PERSON ATTACHING TAG	SIGNATURES OF PERSONS CHECKING TAG
	SIGNATURE OF AUTHORIZING PERSONNEL	SIGNATURE OF VENDOR REPRESENTATIVE

DANGER DO NOT OPERATE
OPERATION OF THIS EQUIPMENT WILL ENDANGER PERSONNEL OR HARM THE EQUIPMENT. THIS EQUIPMENT SHALL NOT BE OPERATED UNTIL THIS TAG HAS BEEN REMOVED BY AN AUTHORIZED PERSON.

Attachment 2- Maintenance Tag

DANGER

**DO
NOT
OPERATE**

Maintenance Department

This lock/tag may
only be removed by:

Name _____

Date _____

DANGER

This energy source has
been **LOCKED OUT!**

Only the individual who
signed the reverse side
may remove this lock/tag.

Remarks: _____
