

NAVDIVESALVTRACENINST 5101.1E
Code 10
11 January 2001

NAVDIVESALVTRACEN INSTRUCTION 5101.1E

Subj: EQUIPMENT LOCKOUT/TAG OUT PROCEDURES

Ref: (a) OPNAVINST 5100.23 (Chapter 24, Energy Control Program, Lockout/Tag out, Ashore)
(b) OPNAVINST 3120.32 (Section 630.17, Equipment Tag-out Bill, Afloat)
(c) Naval Ship's Technical Manual Chapter 505 (Piping Systems)
(d) OSHA Directive STD 1-7.3-29 CFR 1910.147, The Control of Hazardous (Lockout/Tagout) - Inspection Procedures and Interpretive Guidance

Encl: (1) Lockout/Tag Out procedures
(2) Lockout/Tag Out Index and Record of Audits
(3) Danger/Caution Tag Out Record Sheet
(4) NAVDIVESALVTRACEN Memorandum, Results of Red Tag Audit
(5) NAVDIVESALVTRACEN Lockout/Tag Out Training Requirements
(6) NAVDIVESALVTRACEN Letter of Appointment as Lockout/Tag Out Authorizing Officer

1. Purpose. This instruction establishes NAVDIVESALTRACEN policy and minimum procedures for locking out and/or tagging out the sources of energy to equipment or systems under the requirements of references (a) and (b).

2. Cancellation. NAVDIVESALVTRACENINST 5101.1D.

3. Discussion. This instruction standardizes work practices, incorporating accepted Lockout/Tag Out philosophies under the cognizance of Naval Sea Systems Command (NAVSEA) and Naval Facilities Engineering Command (NAVFAC). This instruction clarifies the procedures to be utilized on all equipment under the cognizance of NAVDIVESALVTRACEN.

4. Policy. All NAVDIVESALTRACEN personnel are to comply with Lockout and Tag Out procedures detailed in enclosure (1). Lockout procedures are necessary to prevent the unexpected start up of machines or equipment, or release of stored or residual energy that could cause material damage, serious injuries or death. Lockout is achieved through the installation of locking devices, locks and tags to isolate energy sources so work can be accomplished. Lockout procedures shall be used for all corrective and preventive maintenance including work done by repair activities or contractors in accordance with enclosure (1). When energy isolating devices are not lockable under the Lockout Program, Tag Out procedures shall be used in accordance with enclosure (1).

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Tag Out refers to the installation of Lockout/Tag Out tags, enclosure (1), when locking devices are not feasible. LOCKOUT AND TAG OUT PROCEDURES SHALL BE ENFORCED AT ALL TIMES.

5. Action.

a. Engineering Officer Shall:

(1) Conduct training to:

(a) Ensure all Department Heads/Division Officers are familiar with the Lockout and Tag Out procedures per enclosure (1).

(b) Ensure all personnel who conduct Lockout/Tag Out are fully trained in the procedures per enclosure (1).

(2) Retain a Master Key for all locks used in the Lockout Program.

b. Department Heads Shall:

(1) Ensure that Lockout and Tag Out procedures are implemented in accordance with this instruction.

(2) Establish a Lockout station for their department to include a key box and Lockout/Tag out Log.

(3) The Lockout/Tag out Log will include:

(a) The procedures listed in enclosure (1).

(b) Lockout/Tag Out Index and Record of Audit, enclosure (2).

(c) Lockout/Tag Out Record Sheets, enclosure (3).

(d) Names of Authorizing Officers and those personnel authorized to conduct Lockout/Tag Out actions.

(e) A list of systems, equipment and machinery not capable of being locked out by attaching a lockout device.

(4) Verify that system label plates and diagrams that depict system energy sources are correct. Experience with electrical transfer panels and valve numbering shows that sometimes label plates are in error. Discrepancies shall be noted and forwarded to the Engineering Officer to initiate drawing revision.

(5) Review the weekly Lockout/Tag Out audit reports and take action as necessary.

c. Authorizing Officers shall:

(1) Review the Lockout/Tag Out Log weekly to stay informed of what the status of equipment, machinery or systems in their area.

(2) Review the nature of work planned and the proposed Lockout/Tag Out with the individual performing the maintenance, repair or alteration to ensure that it does not adversely impact operations.

(3) Verify and sign entries on the Lockout/Tag Out Record Sheet for entry into the Lockout/Tag Out log.

(4) Direct the individual performing the Lockout/Tag Out to notify the appropriate Department Head if the Lockout/Tag Out action will affect systems or equipment operations in another department before performing the Lockout/Tag Out actions.

(5) Lockout/Tag Out equipment, machinery or systems, which have been rendered inoperable due to casualty or malfunction.

(6) When necessary, verify a system lineup after maintenance, repair or alteration has been performed.

(7) Have actions cleared from the Lockout/Tag Out Record Sheet.

(8) Maintain current Authorizing Officer List in the Lockout/Tag Out Log for your area.

(9) Maintain a list of systems, equipment, and machinery not capable of being locked out by attaching a lockout device.

d. The Electrical Shop shall:

(1) Provide all Lockout/Tag Out devices and locks for the program.

(2) Maintain a copy set for all locks held by department personnel.

(3) Maintain a log of current command Authorizing Officers.

(4) Maintain the custody and control of all lockout devices (valve covers, breaker covers, locks, etc.).

(5) Maintain a log of active locks issued to personnel include the number of locks and the key numbers issued.

(6) Maintain key and lock inventory for all locks utilized in the program.

(7) Audit weekly, compliance with Lockout/Tag Out procedures, by checking Lockout devices, tags and the Lockout/Tag Out Log. This check shall be recorded on the current index sheet.

Completed Lockout/Tag Out Record Sheets shall be maintained in the Lockout/Tag Out Log for 30 days. During the weekly audit, completed Lockout/Tag Out Record Sheets over 30 days old shall be removed from the Lockout/Tag Out Log. Index pages shall be maintained for one year.

(8) Complete audit reports, enclosure 4, and forward to the Department Head.

e. All hands shall:

(1) Receive training on Lockout and Tag Out procedures as part of the NAVDIVESALVTRACEN indoctrination class, on the job training and annual awareness training per enclosure (5). Training shall be conducted for all new members, civilian and military, when reporting on board.

(2) All hands shall comply with the Lockout/Tag Out procedures in enclosure (1).

f. The following precautions shall be observed:

(1) Only the person installing a lockout device and lock, and/or tag shall remove it. The Engineering Officer or Department Head are the ONLY persons authorized to remove someone else's Lockout device and lock, and/or tag under the following conditions:

(a) The Engineering Officer or Department Head personally verifies that no one is working on the equipment or system that is locked and/or tagged out.

(b) In the opinion of the Engineering Officer or the Department Head the circumstances requires the removal of the Lockout device and lock, and/or tag.

(2) When entering information on the Danger/Caution Tag-Out Record Sheet in block 6 include the key numbers required for this action.

(3) Tags shall be attached by an electrical tie wrap. The tag information shall include:

- (a) Person applying Lockout/Tag Out Device(s) printed name, shop or work center code.
- (b) Authorizing Officers printed name
- (c) Date applied to equipment, machinery or system
- (d) Printed name of person checking tag
- (e) Printed information on System/Component/Identification
- (f) Printed position or condition of item tagged
- (g) Serial number from Danger/Caution Tag-Out Record Sheet

(4) If more than one person is working on a component or system, they shall each install their own lock and tag. The lock shall be applied in a multiple Lockout hasp. Upon completion of the task, that person shall remove only their lock and tag.

g. Lockout/Tag Out Logs will be used with the following prefixes to differentiate work centers:

- A - YDT-17 Red Tag Log
- B - YDT-18 Red Tag Log
- C - Small Boat and Yellow Gear Red Tag Log
- D - Engineering Red Tag Log

h. Two-valve protection will be red-tagged in gas systems pressurized equal to or greater than 1000 psig. The valve closest to the work area providing pressure will have the lockout device installed.

6. Areas of Responsibilities. The following positions will be delegated in writing, enclosure (6), by the Commanding Officer to authorize Lockout/Tag Out for the area assigned:

a. The Engineering, Department Head, Quality Assurance Administrator, Repair Division Officer/Chief, or Hyperbarics Division Officer/Chief shall authorize the Lockout/Tag Out Record Sheet for the building complex and all Divers Life Support Systems (DLSS).

b. The Craftmaster, Craft Officer or Assistant Craft Officer shall authorize the Lockout/Tag Out Record Sheet for diving craft, with the exception of DLSS.

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c. During diving operations on board craft the Project Officer shall authorize the Lockout/Tag Out Record Sheet.

d. The Craft Officer, Assistant Craft Officer, Craft Department Engineer, or Boat Shop Division Officer shall authorize the Lockout/Tag Out record sheet for small boats and yellow gear.

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Lockout/Tag Out Procedures. This program establishes Lockout procedures for isolating energy sources whenever maintenance or servicing is done on systems, equipment and machinery. The application of energy controls (implementation of Lockout and/or Tag Out procedures) shall require the following elements.

a. Inform and obtain the approval of the Authorizing Officer (see list of Authorizing Officers) for all maintenance, repair or alteration of equipment, machinery or system that requires Lockout.

b. Review circuit schematics or system diagrams as necessary to ensure all energy sources to the system being worked on are locked out.

c. If a Lockout will affect systems or equipment involving ship controls, operations and/or propulsion notify the Craftmaster.

d. If a Lockout will affect the operation in other departments notify the appropriate Department Head.

e. Properly shut down the equipment per current practices and instructions.

f. De-activate the energy source so that the system, equipment or machinery is isolated.

g. Lockout the energy sources with the appropriate Lockout device and lock. Before securing the, lock, install a Lockout/Tag Out tag.

h. The locked out system shall be entered on the Lockout/Tag Out Record Sheet. The Authorizing Officer shall verify and sign the record sheet before it is entered into the Lockout/Tag Out Log.

i. Stored or residual energy such as capacitors, rotating flywheels, hydraulic systems and air, gas, steam or water pressure, must be dissipated or retained by methods such as grounding, repositioning, blocking or bleeding down.

j. Any equipment needing repair/maintenance that can be disconnected from it's energy source and the repair technician has control of the disconnected attachment device in the immediate work area need not be entered in the Lockout/Tag Out Log nor does the Authorizing Officer need to be notified. Example: An electrical wall plug can be disconnected from the wall outlet; a DLSS console is disconnected from its gas source.

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k. All keys for lockout devices shall be in custody of the employee locking out the system while conducting maintenance on a Lockout/Tag Out. If work is not completed before close of business the key shall be placed in the divisional Lockout/Tag Out station and stored in the key box until work resumes. At the completion of the task the locking devices, locks, and keys shall be returned to the electrical shop.

2. When locking devices are not feasible the following elements shall apply:

a. Follow the procedures for locking out the equipment, system or machinery with the following applicable step:

(1) For electrical equipment that has no ability to attach a lockout device:

(a) Lockout/Tag Out at main breaker.

(b) Remove fuse or other conductor.

(2) For systems under pressure:

(a) Two-valve protection will be required.

(b) Remove the valve handle on the last valve tagged closest to the work.

3. When servicing or maintenance is completed to include testing and the system, equipment or machinery is ready to return to normal operation condition, the following steps shall be taken:

a. Notify the Authorizing Officer when you will remove the locks and return the equipment, machinery or system to normal. Only the individual who installed the Lock may remove it under this procedure. Under special circumstances, only the Engineering Officer or the Department Head is authorized to remove someone else's lock.

b. Check the system, equipment or machinery and the immediate area, to ensure that nonessential items have been removed and that system, equipment or machinery components are operationally intact.

c. Check to ensure all personnel have been safely positioned or removed from the area.

d. Verify that the system, machinery and equipment are properly lined up.

- e. Remove the lock's, Lockout device and tag, and re-energize the system, equipment or machinery.
- f. Notify affected departments that servicing or maintenance is completed and system, equipment or machinery is ready for use.
- g. Clear the Lockout action on the Lockout/Tag Out Record Sheet. For multiple Lockout actions, only the lock that is being removed shall be logged as completed. If the Engineering Officer or Department Head removed and cleared someone else's Lockout, an explanation shall be made on the Lockout/Tag Out Record Sheet.

LOCKOUT/TAG-OUT TRAINING REQUIRMENTS

1. All hands shall receive awareness training on lockout procedures annually. This training shall be documented. This training shall include:

- a. Purpose, function and use of Lockout procedures.
- b. Prohibition of operating equipment that is locked out.

2. Personnel, who install or remove Lockout devices and Authorizing Officers, shall receive on the job training, which shall be documented. This training shall include:

a. The recognition of hazardous energy sources and identity of systems, equipment and machinery capable of being locked out.

b. Recognition that tags must be used for those systems, equipment and devices not capable of being locked.

c. A description of Lockout/Tagout procedures to include who can operate equipment in a lockout/tagout condition, when a lockout/tagout is not required, who authorizes the lockout/tagout, who can remove the lockout/tagout, and no one can bypass or ignore a lockout/tagout.

d. Tags must be legible and understandable by all. Names will be printed and the person attaching tag will enter their shop phone number across the end of the tag

- e. The attachment methods for locking devices.

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Date _____

From: Commanding Officer, Naval Diving and Salvage Training
Center

To: (Name of Authorizing Officer being appointed)

Subj: LETTER OF APPOINTMENT AS LOCKOUT/TAG OUT AUTHORIZING
OFFICER

Ref: (a) OPNAVINST 5100.23
(b) OPNAVINST 3120.32 (Section 630.17, Equipment Tag-out
Bill Afloat)

1. You are appointed a Lockout/Tag Out Authorizing Officer for
NAVDIVESALVTRACEN. Your duties include:

a. Review the Lockout/Tag Out Log weekly to stay informed of
the status of equipment, machinery or systems in your department.

b. Review the nature of work planned and the proposed
Lockout /Tag Out with the individual performing the maintenance,
repair or alteration to ensure that it does not adversely impact
operations.

c. Verify and sign entries on the Lockout/Tag Out Record
Sheet for entry into the Lockout/Tag Out log.

d. Direct the individual performing the Lockout/Tag Out to
notify the appropriate Department Head if the Lockout/Tag Out
action will affect systems or equipment operations in another
department before performing the Lockout/Tag Out actions.

e. Lockout/Tag Out equipment, machinery or systems, which
have been rendered inoperable due to casualty or malfunction.

f. When necessary, verify a system lineup after maintenance,
repair or alteration has been performed.

g. Have actions cleared from the Lockout/Tag Out Record
Sheet.

h. Review the weekly Lockout/Tag Out audit reports and take
action as necessary.

2. This appointment is to remain in effect for the duration of
your assignment at NAVDIVESALVTRACEN.

Copy to:
Electrical Shop

Enclosure (6)

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Date _____

MEMORANDUM

From: _____

To: _____

Department Head

Subj: RESULTS OF LOCKOUT/TAG OUT AUDIT

1. Weekly Lockout/Tag Out Audit was conducted with the following results:

Effective

Log Serial Numbers Equipment Reason/Status

Cleared Lockout/Tag Outs: Attach cleared Danger/Caution
sheets for review.

Log Serial Numbers Equipment Reason/Status

Discrepancies Noted:

Log Serial Numbers Equipment Reason/Status

Very respectfully,

Enclosure (4)

DANGER/CAUTION TAG-OUT RECORD SHEET		1. DATE/TIME TAG-OUT ISSUED
2. SYSTEM OR COMPONENT		3. LOG SERIAL NO.
4. REASON FOR TAG-OUT		
5. PERSONNEL/EQUIPMENT HAZARDS INVOLVED (MANDATORY FOR DANGER TAGS)		
6. AMPLIFYING INSTRUCTIONS (MANDATORY FOR CAUTION TAGS)		
7. WORK NECESSARY TO CLEAR TAG(S) (INCLUDING TESTS)		

OPERATIONS/WORK ITEMS INCLUDED IN TAG-OUT

8. APPLICABLE DOCUMENTATION (I.E, JOB ORDER, RIP-OUT, S/P, ETC) NUMBER & TITLE	9. TAG NUMBERS USED	10. DATE/ TIME ISSUED OR ADDED	11. PETTY OFFICER IN CHARGE	13. AUTHORIZING OFFICER	WORK COMPLETE	
			12. SECOND PERSON (SIGNATURE)	14. REPAIR ACTIVITY REP. (WHEN APPROP)	15. WCS/POIC	16. REPAIR ACTIVITY REP. (WHEN APPROP)

