



Fleet Safety Manual

7.B.5 – Lockout and Tagout

1 Purpose

- a) To ensure Canadian Coast Guard (CCG) personnel are protected from accidental exposure to energized systems such as: electrical, hydraulic, pneumatic, water, gas, steam pressure, vacuum, high temperature, cryogenic temperature, radio-frequency emissions, potentially reactive chemicals, stored mechanical energy, or equipment actuation while working on or near CCG systems and equipment.

2 Responsibilities

2.1 Commanding officer

The commanding officer or their delegate, is responsible for ensuring:

- a) this procedure is applied on board the vessel
- b) the program or stakeholders are advised of any lockouts, which affect their operational readiness

2.2 Chief engineer

The chief engineer or their delegate is responsible for ensuring:

- a) they consult with the commanding officer prior to locking out or disabling any energized system or equipment which affects the operational readiness or navigational safety of the vessel
- b) approval of all lockouts and tagouts for energized systems or equipment, each event is recorded using a [lockout/tagout record sheet](#), and all record sheets are logged in a lockout/tagout register
- c) the officer of the watch, in the deck log, records all notifications regarding lockouts and tagouts affecting operational readiness or navigational safety upon reception
- d) any person conducting maintenance work on equipment to be de-energized, has been familiarized with the site specific work instructions (SSWIs), and the SSWIs are available for examination for the duration of the work
- e) the commanding officer is notified when a locked-out system affecting operational readiness or the navigational safety of the vessel is re-energized

3 Instructions

3.1 Department heads instructions

- a) The department heads are responsible for ensuring maintenance routines used on board the vessel for energized systems or equipment to be isolated includes all relevant information.

3.2 General

- a) Prior to performing work, a risk assessment must be completed in accordance with Section 3 of [Fleet Safety Manual \(FSM\) 7.A.1 – Assessing Risk](#).
- b) SSWIs must be followed for the lockout/tagout of specific equipment, when in place. Where possible, consider using pictures of the equipment and their energy sources. The instructions must include:
 - i. identification of the machinery, equipment, or processes
 - ii. a listing of all energy isolating devices and their locations
 - iii. steps for shutting down, isolating, block, securing, and relieving stored or residual energy
 - iv. steps for placing and removing lockout devices
 - v. steps for confirming isolation and de-energization have been accomplished
 - vi. steps for verifying every person has cleared the work site, and the equipment has been inspected to ensure it is ready to return to service
- c) No person is to remove a lockout, tagout, re-energize a system, or piece of equipment that has been locked or tagged out, without receiving the approval of the chief engineer or their delegate.
- d) The energy-isolating device (circuit breaker, disconnect switch, flow control valve, blank flange, a block, or some similar device used to block or isolate energy), should provide the capability of being locked, or lock wired, in the de-energized or isolated position.
- e) Where the energy-isolating device cannot be securely locked, the system should be blanked with a physical break.
- f) An inspection must be performed by the chief engineer, or their delegate, to ensure isolation will be achieved by the planned lockout/tagout. Verifying depressurization by breaking a flanged connection, loosening valve bonnets, removing instrument tubing, or other similar actions must be avoided unless no other means for identifying depressurization exists.
- g) When a piece of equipment or device is isolated, checks must be made at the commencement of each work period to ensure that the components remain in the isolated position.

3.3 Locks and tags

- a) A lockout device is a device that uses a positive means to hold an energy-isolating device in the safe position, and prevents the re-energizing of systems or equipment. Hasps, chains, and other devices may be treated as lockout devices when used in combination with locks.

- b) An individual key is required for each specific lock and the person responsible for the maintenance of the system or equipment being locked out, is to be the only person in possession of the key. Master key locks must not be used as a lockout device. When equipment is locked out over a crew change, the incoming chief engineer must be informed and be responsible for the lock and key.
- c) A tagout is a prominent warning device that can be securely fastened to an energy-isolating device to indicate the energy-isolating device and the system or equipment being controlled must not be operated. When systems or equipment are being locked out, a tagout must be placed next to the lockout to indicate the date of the lockout, and the name of the individual who placed the lock and has the key. The tagout is not to be removed by anyone other than the person who placed the tagout, or another person who has physically relieved the person who placed the tagout.

3.4 Record keeping

- a) Individual lockout/tagout record sheets must be created, which meet the needs of the site. At a minimum, the information identified on the [Lockout/Tagout Record Sheet - FP-5196-E](#) must be collected.
- b) Lockout/tagout records must be retained on board for a period of 12 months.
- c) The chief engineer must maintain a lockout/tagout register, which must provide ready reference to the status of energized systems or equipment locked or tagged out. This register must include the following information:
 - i. unique identifier number corresponding to the number on the lockout/tagout record sheet
 - ii. energized system or equipment affected
 - iii. date lockout/tagout opened
 - iv. person in charge of the work
 - v. date lockout/tagout closed
 - vi. person responsible for closing the lockout/tagout
- d) This register, accompanied by all remaining open lockout/tagout record sheets must form part of the chief engineer's changeover notes.

3.5 Removing lockouts and tagouts

- a) The person who is removing the lockout/tagout must ensure the re-energized system or equipment is operationally intact, and components within the lockout area are repositioned, if required, to permit safe operations.
- b) Components that could cause automatic operation of a circuit breaker, or a motor, or an air-operated valve when control power or pressure is restored must be in a position where automatic operation will not occur when the lockout/tagout is removed.

4 Training

- a) The chief engineer or their delegate, must provide familiarization or training to all persons involved in the lockout and tagout of equipment on:
 - i. this procedure and SSWIs
 - ii. equipment energy control systems

- iii. equipment energy source(s)
 - iv. how to isolate them and verify the equipment is de-energized
 - v. the personal protective equipment (PPE) to be used while performing work on de-energized systems
- b) In accordance with CSA Z460-13 - Control of hazardous energy - Lockout and other methods¹, section 7.5.2, the training will occur every 3 years, or as soon as there are changes to equipment or procedures.

5 Personal protective equipment

- a) Persons performing work on de-energized systems must wear PPE appropriated to the risks of the task as determined by the [CCG/6108 - Personal Protective Equipment Manual](#).

6 Documentation

- Deck log entries
- [Lockout/Tagout Record Sheet - FP-5196-E](#)
- Lockout/tagout register
- SSWIs
- Work orders

7 References

- [Maritime Occupational Health and Safety Regulations](#) – Part 15 – Electrical Safety
- CSA Z460-13 - Control of hazardous energy - Lockout and other methods
- [Canadian Centre for Occupational Health and Safety](#) – Lockout / Tag out
- [CCG/5737 – Fleet Safety Manual](#) – 7.B.6 Electrical Safety – Working on Energized Electrical Conductors or Circuit Parts
- [CCG Intranet – Integrated Technical Services – Publications](#) – CCG Marine Electrical Safety Manual

¹ The standard can be viewed for free, from a government computer at the [Canadian Centre for Occupational Health and Safety - CCOHS](#)