

CANCELLED

State of Alaska
Department of Labor
Labor Standards and Safety Division

DOSH Program Directive 90-10

December 11, 1990

Subject: 01.1203, Alaska General Safety Code, The Control of Hazardous Energy (Lockout/Tagout) - Inspection Procedures and Interpretive Guidance.

A. Purpose. This DOSH Program Directive (PD) establishes policies and provides clarification to ensure uniform enforcement of on Lockout/Tagout Standard.

B. Background. The Standard for Control of Hazardous Energy (Lockout/Tagout), 01.1203, Alaska General Safety Code became effective on August 8, 1990.

1. Since the inception of its enforcement program, OSHA and Alaska OSH have relied on the "General Duty Clause" (AS 18.60.075(a)(4)) to ensure that employers safeguarded their maintenance and service employees through the use of lockout/tagout from the hazards involving the unintentional release of hazardous energy. Such violations reached a level so significant that the development and promulgation of a lockout/tagout standard was required.
 2. The new rule addresses practices and procedures that are necessary to disable machinery or equipment and to prevent the release of potentially hazardous energy while maintenance and servicing activities are being performed.
 3. The lockout/tagout provisions of this standard are for the protection of general industry workers while performing servicing and maintenance functions and augment the safeguards specified in Article 8 of the General Safety Code and in Electric Code.
- C. Inspection Guidelines. The standard incorporates performance requirements which allow employers flexibility in developing lockout/tagout programs suitable for their particular facilities.
1. The compliance officer shall determine whether servicing and maintenance operations are performed by the employees. If so, the compliance officer shall further determine whether the servicing and maintenance operations are covered by 01.1203 GSC or by the requirements or employee safeguarding specified by other standards as discussed in C.1.

2. Evaluations of compliance with 01.1203 GSC shall be conducted during all general industry inspections within the scope of the standard in accordance with the Compliance Manual, Chapter III, D.7. and 8., Additional Information to Supplement Records Review. The review of records shall include special attention to injuries related to maintenance and servicing operations.
3. The compliance officer shall evaluate the employer's compliance with the specific requirements of the standard. The following guidance provides a general framework to assist the compliance officer during inspections:
 - a. Ask the employer for any hazard analysis or other basis on which the program related to the standard was developed. Although this is not a specific requirement of the standard, such information, when provided, will aid in determining the adequacy of the program. It should be noted that the absence of a hazard analysis does not indicate non-compliance with the standard.
 - b. Ask the employer for the documentation including: procedures for the control of hazardous energy including shutdown, equipment isolation, lockout/tagout application, release of stored energy, verification of isolation; certification of periodic inspections; and certification of training. The documented procedure must identify the specific types of energy to be controlled and, in instances where a common procedure is to be used, the specific equipment covered by the common procedure must be identified at least by type and location. The identification of the energy to be controlled may be by magnitude and type of energy. Note the exception to documentation requirements at paragraph 01.1203(c)(4)(A), "Note". The employer need not document the required procedure for a particular machine or equipment when all eight (8) elements listed in the "Note" exist.
 - c. Evaluate the employer's training programs for "authorized", "affected", and "other" employees. Interview a representative sampling of selected employees as a part of this evaluation (01.1203(c)(7)(A)).
 - (1) Verify that the training of authorized employees includes:
 - (a) Recognition of hazardous energy;
 - (b) Type and magnitude of energy found in the workplace;
 - (c) The means and methods of isolating and/or controlling energy; and

- (d) The means of verification of effective energy control, and the purpose of the procedures to be used.
 - (2) Verify that affected employees have been instructed in the purpose and use of the energy control procedures.
 - (3) Verify that all other employees who may be affected by the energy control procedures are instructed about the procedure and the prohibition relating to attempts to restart or reenergize such machines or equipment.
 - (4) When the employer's procedures permit the use of tagout, the training of authorized, affected, and other employees shall include the provisions of 01.1203(c)(7)(B) and (d)(4)(C).
- d. Evaluate the employer's manner of enforcing the program (01.1203(c)(4)(B)).

4. In the event that deficiencies are identified by following the guidelines in C.3. of this PD, the compliance officer shall evaluate the employer's compliance with specific requirements of the standard, with particular attention to the interpretive guidance provided in section D. and to the following:

- a. Evaluate compliance with the requirements for periodic inspection of procedures.
- b. Ensure that the person performing the periodic inspection is an authorized employee other than the one(s) utilizing the procedure being inspected.
- c. Evaluate compliance with retraining requirements which result from the periodic inspection of procedures and practices, or from changes in equipment/processes.
- d. Evaluate the employer's procedures for assessment, and correction of deviations or inadequacies identified during periodic inspections of the energy control procedure.
- e. Identify the procedures for release from lockout/tagout, including:
 - (1) Replacement of safeguards, machine or equipment inspection, and removal or non-essential tools and equipment;
 - (2) Safe positioning of employees;

- (3) Removal of lockout/tagout device(s); and
 - (4) Notification of affected employees that servicing and maintenance is completed.
- f. Ensure that when group lockout or tagout is used, it affords a level of protection equivalent to individual lockout or tagout as amplified in D.7. through D.9. or this PD.
5. The lockout/tagout standard is a performance standard; therefore, additional guidance is provided in Appendix C of this PD instruction to assist in effective implementation by employers and for uniform enforcement by OSH field staff.
- D. Interpretive Guidance. The following guidance relative to specific provisions of 01.1203 GSC is provided to assist compliance officers in conducting inspections where the standard may be applicable:
1. Scope of the Standard.
 - a. The standard as specified in 01.1203 GSC applies to any source of mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
 - (1) The standard applies to piping systems, and requires, in 01.1203 (d)(5), that all potentially hazardous stored or residual energy be relieved, disconnected, restrained, and otherwise rendered safe. If there is a possibility of reaccumulation of stored energy to a hazardous level, continued monitoring shall be performed while a potential hazard exists.
 - (2) The standard also applies to high intensity electromagnetic fields regulated at 04.0105 OHEC, nonionizing radiation. Such electromagnetic devices shall be deenergized and held off whenever workers are present within a high intensity ambient field.
 - (3) Servicing/maintenance of fire alarm and extinguishing systems and their components, upon which other employees are dependent for fire safety, are not required to meet the requirements of this standard if the workers performing servicing/maintenance upon fire extinguishing systems are protected from hazards related to the unexpected release of hazardous energy by appropriate alternative measures. (Article 13, GSC, Fire Protection)

- b. The standard does not apply to servicing and maintenance when employees are not exposed to the unexpected release of hazardous energy.
- c. Safeguarding workers from the hazards of contacting electrically live parts (exposure to electric current) continues to be regulated by Subchapter 3, Electrical Code.
- d. Servicing and maintenance functions conducted during normal production operations are not regulated at 01.1203 GSC if the safeguarding provisions of Article 8 GSC or other applicable portions of Alaska's occupational safety and health standards prevent worker exposure to hazards created by the unexpected energization or start-up of the machine or equipment. However, lockout/tagout procedures are required if the production safeguards are rendered ineffective while an employee is exposed to hazardous portions of the machines or equipment.
- e. Generally, activities such as lubrication, cleaning or unjamming, servicing of machines or equipment, and making adjustments or tool changes, where the employee may be exposed to the UNEXPECTED energization or start-up of the equipment or release of hazardous energy, are covered by this standard. **However, minor tool changes and adjustments, and other minor servicing activities, which take place during normal production operations, are not covered by this standard if they are routine, repetitive, and integral to the use of equipment for production, and if work is performed using alternative protective measures which provide effective employee protection. Thus, lockout or tagout is not required by this standard if the alternative protective measures enable the servicing employee to clean or unjam, or otherwise service the machine without being exposed to unexpected energization or activation of the equipment, or the release of stored energy.**

NOTE: Appendix C, section A, provides further guidance in this area.

- f. The exclusion of plug and cord connected electric equipment, at 01.1203(a)(2)(C)(i), applies only when the equipment is unplugged and the plug is under the exclusive control of the employee performing the servicing and/or maintenance.
 - (1) The plug is under the exclusive control of the employee if it is physically in the possession of the employee, or in arm's reach and in line of sight of the employee, or if the employee has affixed a lockout/tagout device on the plug.

- (2) The company lockout/tagout procedures required by the standard at 01.1203(c)(4) GSC shall specify the acceptable procedure for handling cord and plug connected equipment.

2. Procedures.

- a. The employer must develop and document procedures and techniques to be used for the control of hazardous energy. The standard, at 01.1203(c)(4)(A) GSC identifies eight (8) conditions that must exist in order to excuse the employer's obligation to maintain a written procedure for a specific machine or piece of equipment.
- b. 01.1203(d)(3) and (d)(5) GSC provide that energy isolation be a mandatory part of the employer's control procedure where either a lockout system or a tagout system is used.
- c. Similar machines and/or equipment (such as those using the same type and magnitude of energy and the same or similar types of controls) can be covered with a single written procedure.

3. Lockout vs. Tagout.

- a. Alaska OSH has determined that lockout is a surer means of ensuring deenergization of equipment than tagout, and that it is the preferred method.
- b. 01.1203(c)(3)(B) GSC provides that: When using a tagout program in those instances where the equipment is capable of being locked out, the employer shall demonstrate that the tagout program will provide a level of safety equivalent to that obtained when using a lockout program. Additional means beyond those necessary for lockout are required. (Additional means include: additional safety measures such as the removal of an isolating circuit element, blocking of a controlling switch, opening of an extra disconnecting device, or the removal of a valve handle to reduce the likelihood of inadvertent energization.)
- c. 01.1203(c)(4)(B) GSC provides that: Where lockout/tagout programs are used, the employer is required to implement an effective means of enforcing the program.
- d. 01.1203(c)(7)(B)(i-iv) GSC provide that: Additional training of authorized, affected and other employees is required when tagout programs are used.

- e. 01.1203(c)(5)(B)(i) GSC requires that lockout and tagout devices be capable of withstanding the environment to which they are exposed. Devices which are not exposed to harsh environments need not be capable of withstanding such exposure.
- f. 01.1203(c)(5)(B)(iii)(b) GSC requires that tagout devices having reusable, non-locking, easily detachable means of attachment (such as string, cord, or adhesive) are not permitted.

4. Employees and Training.

- a. The standard recognizes three types of employees: (1) "authorized" and (2) "affected", defined in 01.1203 (b) GSC, and (3) "other", defined in 01.1203(c)(7)(B)(iii) GSC. Different levels of training are required based upon the respective roles of employees in the control of energy and the knowledge which they must possess to accomplish their tasks safely and to ensure the safety of fellow workers as related to the lockout/tagout procedures (01.1203(c)(7)(A) GSC).
- b. Employees who exclusively perform functions related to normal production operations, and who perform servicing and/or maintenance under the protection of normal machine safeguarding, need only be trained as "affected" (rather than "authorized") employees even if tagout procedures are used. (See, D.1.d. and D.1.e. of this PD.)
- c. The employer's training program must cover, at a minimum, the following three areas: energy control program, elements of energy control procedures relevant to employee duties, and the pertinent requirements of the standard (01.1203(c)(7) and (d) through (f) GSC).
- d. The employer must provide:
 - (1) Effective initial training;
 - (2) Effective retraining as needed; and
 - (3) Certification of training. The certification shall contain each employee's name and dates of training (01.1203(c)(7)(D) GSC).
- e. Retraining of authorized and affected employees is required:
 - (1) Whenever there is a change in employee job assignments;

- (2) Whenever a new hazard is introduced due to a change in machines, equipment or process;
- (3) Whenever there is a change in the energy control procedures; or
- (4) Whenever a periodic inspection by the employer reveals inadequacies in the company procedures or in the knowledge of the employees.

5. Periodic Inspection by the Employer

- a. At least annually, the employer shall ensure that an authorized employee other than the one(s) utilizing the energy control procedure being inspected, is required to inspect and verify the effectiveness of the company energy control procedures. These inspections shall at least provide for a demonstration of the procedures and may be implemented through random audits and planned visual observations. These inspections are intended to ensure that the energy control procedures are being properly implemented and to provide an essential check on the continued utilization of the procedures 01.1203(c)(6)(A) GSC.
 - (1) When lockout is used, the employer's inspection shall include a review of the responsibilities of each authorized employee implementing the procedure with that employee. Group meetings between the authorized employee who is performing the inspection and all authorized employees who implement the procedure would constitute compliance with this requirement.
 - (2) When tagout is used, the employer shall conduct this review with each affected and authorized employee.
 - (3) Energy control procedures used less frequently than once a year need be inspected only when used.
- b. The periodic inspection must provide for and ensure effective correction of identified deficiencies (01.1203 (c)(6)(A)(i) GSC).
- c. The employer is requested to certify that the prescribed periodic inspections have been performed (01.1203(c)(6)(B)).

6. Equipment Testing or Positioning. Under 01.1203(f)(1), OSH allows the temporary removal of lockout or tagout devices and the reenergization of the machine or equipment ONLY during the limited time necessary for the testing or positioning of machines, equipment or components. After the completion of the

temporary reenergization, the authorized employees shall again deenergize the equipment and resume lockout/tagout procedures.

7. Group Lockout/Tagout. Group lockout/tagout procedures shall be tailored to the specific industrial operation and may be unique in the manner that employee protection from the release of hazardous energy is achieved. Irrespective of the situation, the requirements of this generic standard specify that each employee performing maintenance or servicing activities shall be in control of hazardous energy during his/her period of exposure.
 - a. Group operations normally require that a lockout/tagout program be implemented which ensures that each authorized employee is protected from the unexpected release of hazardous energy by his/her personal lockout/tagout device(s). No employee may affix the personal lockout/tagout device of another employee. Various group lockout/tagout, procedures discussed in Appendix C provide for each authorized employee's use of his/her personal lockout/tagout device(s).
 - b. One of the most difficult problems addressed by the standard involves the servicing and maintenance of complex equipment. Such equipment is frequently used in the petrochemical and chemical industries. Acceptable group lockout/tagout procedures for complex equipment are discussed further at Appendix C.

8. Compliance with Group Lockout/Tagout. These operations shall, at a minimum, provide for the following:
 - a. Before the machine or equipment is shut down, each authorized employee who is to be involved during the servicing/maintenance operation shall be made aware by the employer of the type, magnitude, and hazards related to the energy to be controlled and of the method or means to control the energy. In the event that the machine or equipment is already shut down, the authorized employee shall be made aware of these elements before beginning his/her work (01.1203(d)(1) GSC). Verification shall be performed as noted at D.8.f. of this instruction.
 - b. An orderly shutdown of the machine or equipment shall be conducted which conforms to the documented company procedure and which will not create hazards (01.1203(d)(2) GSC).
 - c. All energy isolating devices needed to isolate the machine or equipment shall be effectively positioned and/or installed (01.1203(d)(3) GSC).

- (2) The authorized employees shall remove their respective locks or tags from the energy isolating devices or from the group lockbox(s) following the procedure established by the company (01.1203(e)(3) GSC).
 - (3) In all instances, the company procedure must provide a system which identifies each authorized employee involved in the servicing/maintenance operation.
 - (4) Before reenergization, all employees in the machine or equipment area shall be safely positioned or move from the area, and the affected employees shall be notified that the lockout/tagout devices have been removed (01.1203(e)(2) GSC).
- h. During all group lockout/tagout operations where the release of hazardous energy is possible, each authorized employee performing servicing or maintenance shall be protected by his/her personal lockout or tagout device and by the company procedure. As described at Appendix C, B.1.g., a master tag is a personal tagout device if each employee personally signs on and signs off on it and if the tag clearly identifies each authorized employee who is being protected by it.
9. Compliance of Outside Personnel. Outside servicing and maintenance personnel (contractors, etc.) engaged in activities regulated under 01.1203 GSC are subject to the requirements of that standard.
- a. The compliance officer shall verify that the outside employer and the on-site employer have exchanged information regarding the lockout/tagout energy control procedures used by each employer's workers (01.1203(f)(2)(A) GSC).
 - b. The compliance officer shall verify that the on-site employer has effectively informed his/her personnel of the restrictions and prohibitions associated with the outside employer's energy control procedures (01.1203(f)(2)(B) GSC).
 - c. When an outside employer is engaged in servicing and maintenance activities within an on-site employer's facility and if that contractor's activities are subject to the requirements of 01.1203, the compliance officer shall coordinate with the Chief to obtain permission to initiate an independent inspection of the outside contractors activities.
10. Appendix B contains an example of a functional flow diagram to implement safe lockout/tagout procedures. This flow diagram is presented solely as an aid and does not constitute the exclusive or definitive means of complying with the standard in any particular situation.

E. Classification of Violations.

1. A deficiency in the employer's energy control program and/or procedure that could contribute to a potential exposure capable of producing serious physical harm or death shall be cited as a serious violation.
2. The failure to train "authorized", "affected", and "other" employees as required for their respective classifications should normally be cited as a serious violation.
3. Paperwork deficiencies in lockout/tagout programs where effective lockout/tagout work procedures are in place shall be cited as other-than-serious.

F. Evaluation. In keeping with Alaska OSH's policy, the Chief shall evaluate the effectiveness of the guidance in this instruction annually. The Chief shall submit a written evaluation report to the Director within 30 days of the close of the fiscal year.

- d. The authorized employee(s) performing the servicing or maintenance (following the company procedure) shall personally affix a lock or tag upon each energy isolating device (01.1203(d)(4)(A)). The company procedure must ensure that no employee affixes a personal lockout/tagout device for another employee.
- (1) A single lock upon each energy isolating device, together with the use of a lockbox for retention of the keys and to which each authorized employee affixes his/her personal lock or tag, also satisfies the requirements 01.1203(f)(3)(A) GSC.
 - (2) Locks shall be affixed in a manner that will hold the energy isolating device in a safe (off) position (01.1203(d)(4)(B)).
 - (3) Tagout devices, where used, shall be affixed at the same location as would a lock if such fittings are provided, or shall be affixed in a manner that will clearly indicate that movement of the isolating device is prohibited (01.1203(d)(4)(C)).
- e. Following the application of locks or tags, all potentially hazardous stored energy or residual energy shall be relieved, disconnected, restrained, and otherwise rendered safe (01.1203(d)(5)(A)).
- (1) Verification of energy isolation shall be monitored as frequently as necessary if there is a possibility of reaccumulation of stored energy (01.1203(d)(5)(B)).
 - (2) Monitoring may be accomplished, for example, by observation or with the aid of a monitoring device which will sound an alarm if a hazardous energy level is being approached.
- f. Authorized employees shall verify that isolation and deenergization have been effectively accomplished before starting servicing/maintenance work. Verification is also necessary by each group of workers before starting work at shift changes.
- g. Release from lockout/tagout shall be accomplished in compliance with the requirements at 01.1203(e) GSC.
- (1) The machine or equipment area shall be cleared of nonessential items to prevent malfunctions which could result in employee injuries (01.1203(e)(1) GSC).