

STANDARDS PRESENTATION
TO
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

TITLE 8, DIVISION 1, CHAPTER 4

General Industry Safety Orders
Article 121. Snow Avalanche Blasting

Amend Section 5349 to read:

§5349. Scope.

The provisions found in Article 121, Snow Avalanche Blasting, shall only pertain to snow avalanche control operations, and shall take precedence when in conflict with other applicable safety orders.

(a) Definitions

Deploy is the act of throwing, placing, tethering or propelling a charge into position for detonation.

Position of safety is a location where an employee is isolated or protected from the hazards of blasting and the ensuing avalanche.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.

Black: Original Proposal
Blue: Committee consensus proposal
Red: Additional amendments proposed by the Chair

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Amend Section 5350 to read:

§5350. Training.

(b) Training for members of the blasting crew shall ensure competence in the following areas:

(5) Deployment procedures for the type of charge(s) used including:

(C) Procedures for clearing and guarding the ski lifts, blasting areas, slopes, and runout zones pursuant to requirements in Section 5356(c)(5), Section 5357(a)~~(2)~~(3), Section 5357(b)(6) and Section 5357(e)(3) where applicable.

(e) Essential personnel, as defined in the Note in Section 5355.1(a), other than avalanche blasting crewmembers, shall be adequately trained and competent in their blasting related duties and in the following:

(2) Clearing adjacent areas pursuant to requirements in Sections 5355.1(a)(1) and (3), Section 5356(c)(5), Section 5357(a)~~(2)~~(3), Section 5357(b)(6) and Section 5357(e)(3) where applicable;

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Amend Section 5357 to read:

(a) General Requirements.

(1) The employer shall develop and implement effective written procedures for avalanche control blasting to ensure the safety of avalanche blasting crewmembers during all phases of avalanche control blasting.

(A) The procedures shall be reviewed and updated as often as necessary to ensure that they reflect current, safe operating practices.

(AB) The procedures shall include at a minimum:

1. Recognition of avalanche and blast hazards;
2. Access to deployment zones and communication among avalanche blasting crewmembers;
3. Pre-selection of terrain barriers and safe locations;
4. Explosive handling, arming, and deploying;
5. Emergency response and rescue.

(BC) The employer shall provide for the effective participation of avalanche control blasting crewmembers in the development of safe avalanche control blasting procedures.

(CD) The employer shall ensure that all avalanche control blasting crewmembers are competent in the avalanche control blasting procedures.

(DE) The employer shall provide effective training on the avalanche control blasting procedures to avalanche blasting crewmembers at least annually.

1. The training shall be conducted prior to the first blasting operation of each ~~snow~~ avalanche control season.
2. The employer shall provide an opportunity for interactive questions and answers on avalanche blasting procedures with a licensed avalanche blaster knowledgeable and experienced with the procedures.

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Exception to ~~subsection (E) annual training~~: If no blasting occurs during the entire ~~avalanche control snow~~ season, then training on the procedures is not required for that season.

~~(1)~~(2) All avalanche blasting shall be conducted under the attended supervision of the blaster in charge who is a licensed avalanche blaster, certified by the Division to perform such blasting activities.

~~(2)~~(3) When avalanche blasting is deemed necessary, slopes and trails in the potential avalanche path (runout zone) and ski lifts shall be closed to the public and non-essential personnel and not be opened until the work is completed.

~~(3)~~(4) To ~~ensure~~ ~~insure~~ a dry powder train is exposed to the igniter, at least 1 inch of fuse shall be cut from the fuse prior to attaching the igniter. A cutter with sharp blades shall be used to prevent smearing of tar over the powder train.

~~(4)~~(5) Charges shall be placed, thrown or propelled to the desired location from a safe position by one of the following methods:

(A) Hand deployed pursuant to subsection (b);

(B) Deployed from a ski lift or tram pursuant to subsection (c) if there is no safe approach to the desired location from the ground;

(C) Deployed from helicopters pursuant to subsection (d) if there is no safe approach to the desired location from the ground;

(D) Deployed from an avalauncher/launcher pursuant to subsection (e);

(E) Deployed from such remote control devices accepted by the Division as providing equivalent safety to the remote control devices allowed under subsection (e).

~~(5)~~(6) Avalanche blasting shall be conducted during daylight hours, except during emergency operations.

~~(6)~~(7) Avalanche blasting shall not be conducted during conditions where the blaster cannot determine whether the fuse is lit, or clearly identify the location of the target area for the detonation of the charge.

(b) Hand Deployed Charges (handcharges).

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- (1) A blaster shall only work with one handcharge at a time.
- (2) When placing a handcharge on or in the snow, the crewmember shall be belayed from behind when necessary.
- (3) The handcharge shall be lowered by rope, cord or a long pole to the designated location when there is danger that the charge may slide downhill.
- (4) Before attaching the igniter, the blaster shall:
 - (A) Determine the ~~deployment target;~~ location where the handcharge is intended to land;
 - (B) Determine a pre-selected position of safety as follows;
 - (1) a ~~pre-select~~ terrain barrier, or;
 - (2) if a terrain barrier is not available, a position of safety at least 100 feet from both the location where the handcharge is intended to land and the location from where the blaster will be positioned when the blaster ignites and throws or releases[deploys(?)] the charge;

Exception to subsection (B)(2): The location of deployment is a position of safety that is no less than 100 feet from the location of detonation and where moving to the pre-selected position of safety creates a greater hazard.
 - ~~(B)~~(C) Check the runout zone for personnel;
 - ~~(C)~~(D) Check the blast area for personnel; and
 - (E) Orally alert all affected crewmembers each time a charge will be ignited and thrown or released ~~[deployed?]~~.
- (5) When the blast area and ~~run out~~ runout zone are clear of personnel, the ~~igniter shall be attached to the safety fuse and immediately activated~~ blaster shall attach the igniter onto the safety fuse, immediately activate the igniter to ignite the charge, and deploy the charge within 20 seconds of attaching the igniter onto the safety fuse.
- (6) ~~Avalanche blasting crewmembers shall seek a position of safety behind a pre-selected terrain barrier or a position not less than 100 feet from the ignited charge. Only a licensed avalanche blaster, certified by the Division to perform such avalanche blasting activities, or a person trained~~

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in accordance with subsection (a)(1)(D) who is being directly supervised by a licensed avalanche blaster shall ignite or deploy a handcharge.

(7) Prior to any handcharge being ignited, avalanche blasting crewmembers not involved in igniting or deploying the charge shall ~~move-be~~ behind the pre-selected terrain barrier or ~~remain in a to the other~~ position of safety described in subsection (4)(B). Each crewmember shall orally report to the ~~crew supervisor or~~ blaster-in-charge the crewmember's position of safety, and the ~~crew supervisor or~~ blaster-in-charge shall orally acknowledge the report or, when necessary, re-direct the crewmember to another position of safety.

(8) Immediately following the deployment of a charge, the avalanche blasting crewmember responsible for deploying the charge shall ~~move or be~~ behind the pre-selected terrain barrier or to the other position of safety described in subsection (4)(B).

(9)(7) At the completion of individual avalanche control routes, unused charges shall be deployed or disarmed pursuant to Section 5358(h)(1) and all components transported and returned to approved storage magazines pursuant to requirements in Article 121.

Exception to subsection (9): Unused charges that are immediately required for deployment at another location.

Note: Authority cited: Section 142.3, Labor Code. Reference: Section 142.3, Labor Code.