

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

2520 Venture Oaks Way, Suite 350

Sacramento, CA 95833

(916) 274-5721

FAX (916) 274-5743

Website address www.dir.ca.gov/oshsb**FINAL STATEMENT OF REASONS**

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Division 1, Chapter 4, Subchapter 7, Article 116, Section 5291(b)
of the General Industry Safety Orders

Firing of Explosive Materials (Blasting Operations)**MODIFICATIONS AND RESPONSE TO COMMENTS RESULTING FROM
THE 45-DAY PUBLIC COMMENT PERIOD**

There are no modifications to the information contained in the Initial Statement of Reasons.

SUMMARY AND RESPONSES TO WRITTEN AND ORAL COMMENTS**I. Written Comments**

Mr. John Bobis, P.E., Ph.D.; Technical Principal; Environmental, Health and Safety; Aerojet, by letter dated October 6, 2010.

Comments:

Mr. Bobis states that the subject rulemaking may affect Aerojet's operations and recommends changes that he says will harmonize the terminologies used throughout the explosive industry and clarify that one needs to be at a safe distance from the effects of noise and overpressure even when there is sufficient cover. Mr. Bobis recommends the following changes:

In Section 5291(b), amend the text “. . . blast or flyrock from the blast.” to read “blast (overpressure), noise or fragmentation (flyrock) from the blast.”

In Section 5291(b)(3), amend the text “All personnel are either outside of the blast area or under sufficient cover.” to read “All personnel are either outside of the blast or overpressure and noise areas or under sufficient cover at a safe distance.”

Responses:

Mr. Bobis' recommendation to add "overpressure" and "noise" in Section 5291(b) tends to limit the types of blasting hazards from consideration, as the extremely rapid release of energy during and subsequent to the blast in the form of light, heat, sound, and a shock wave and their interplay with the environmental features and conditions create numerous hazards. Board staff reliance on the term "blast" intends to include all of these hazards which are consistent with the ISEE's Blaster's Handbook (see Documents Relied Upon). In subsection (b), Board staff has elected to list "the flyrock from the blast" in addition to the "blast" to emphasize this common industry hazard, since explosives-related injuries and fatalities often occur when workers are struck by rock, either because they are too close to the blast or rock is thrown much farther than expected.

With regard to Mr. Bobis' recommendation to use the phrase "fragmentation (flyrock)" in Section 5291(b), Board staff finds that the word "fragmentation" is more general than the word "flyrock" when describing the fragments of rock thrown and scattered during explosives blasting that pose a hazard to workers. Therefore, Board staff considers the use of "fragmentation (flyrock)" unnecessary.

In Section 5291(b)(3), the words "all personnel are either outside of the blast area or under sufficient cover" are sufficient, and it is not necessary to identify the specific exposures in the blast area, since General Industry Safety Orders (GISO), Section 5237 defines "Blast Area" as "The area of a blast within the influence of flying fragments, gases, and concussion," thus, clarifying the exposures that may cause employee injury or death.

As for Mr. Bobis' recommendation to include "noise" as in "noise areas" in subsection (b)(3)," Board staff notes that employee protection from noise exposure is addressed in Article 105 of the GISO and would therefore would be duplicative in subsection (b)(3).

With regard to Mr. Bobis' recommendation to retain the phrase "at a safe distance" as currently written in subsection (b), Board staff finds the phrase unnecessary since the Board staff understands and intends that the words "outside of the blast area" would include areas "at a safe distance."

Therefore, Board staff believes no modification of the proposed language with regard to these specific issues is necessary.

The Board thanks Mr. Bobis for his participation in the rulemaking process.

Ken Nishiyama Atha, Regional Administrator, Occupational Safety and Health Administration, by letter dated September 24, 2010.

Comment:

Mr. Nishiyama Atha stated that the proposed modifications are commensurate with federal requirements.

Response:

The Board acknowledges Region IX's determination that the modifications to the proposal are at least as effective as the federal standards.

II. Oral Comment

Bill Jackson, Board Member, commented during the Public Hearing on October 21, 2010 in Oakland, California.

Comment:

Mr. Jackson stated that, as written, the proposal makes the audibility of the alarm very similar to the standard for automatic back-up alarms on heavy equipment. He stated that the question is not whether the warning is heard but whether it is capable of being heard by those in the vicinity of the blasting operation.

Response:

Board staff agrees with Mr. Jackson, as the proposal is a performance standard that mandates that the required signals must be loud enough to be heard clearly in the areas specified in the proposal, which is similar to the back-up alarm requirement in Section 1592 of the Construction Safety Orders, which mandates that the warning sound of the back-up alarms must be of such magnitude that it will normally be audible from a distance of 200 feet.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

These standards do not impose a mandate on local agencies or school districts as indicated in the Initial Statement of Reasons.

ALTERNATIVES CONSIDERED

The Board invited interested persons to present statements or arguments with respect to alternatives to the proposed standard. No alternative considered by the Board would be more effective in carrying out the purpose for which the action is proposed or would be as effective as and less burdensome to affected private persons than the adopted action.