

**OCCUPATIONAL SAFETY
AND HEALTH STANDARDS BOARD**

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**FINAL STATEMENT OF REASONS**

CALIFORNIA CODE OF REGULATIONS

TITLE 8: Division 1, Chapter 4, Subchapter 7, Article 4, Section 3277
of the General Industry Safety Orders

Fixed Ladders**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 except for the following non-substantive modification that is the result of public comments and Board staff evaluation.

Subsection (g)(2), Dimensions and maximum length.

This subsection, as originally proposed, contained both enumerated exceptions as well as a parenthetical exception within the body of the subsection. The parenthetical exception prescribed that cages or wells, "except as provided under subsection (m)," should be provided on ladders of more than 20 feet to a maximum unbroken length of 30 feet. A comment received during the 45-day public comment period indicated that the use of ladder safety systems in lieu of cages and wells lacked clarity. It is proposed to strike the parenthetical exception from the body of subsection (g)(2) and to relocate it, equivalent in substance, in a more logical location as a new Exception 3, part of an already existing set of exceptions, for subsection (g)(2). The purpose and necessity for the proposed relocation is to clarify that ladder safety systems may be used in lieu of cage protection on tower, water tank and chimney ladders as prescribed in Subsection (m).

Summary and Response to Oral and Written Comments:**I. Written Comments**

Stephen Brooks, CSP ARM, Safety Officer, San Francisco Public Utilities Commission, by e-mail dated April 30, 2009.

Comment No. 1:

Reference Exception 2 to Subsection 3277(j)(1): The commenter opines that falls from elevation

and electrocution are the most likely leading causes of death in the electrical power generation and transmission industry. Therefore, he believes that this exception should be amended to require the use of personal fall protection equipment on high-voltage transmission towers while climbing as well as when stationary during a rest period.

Response:

High-Voltage Electrical Safety Orders (HVESO), Subsection 2940.6(b), covers this subject more specifically and therefore takes precedence in the event of inconsistencies. To modify Subsection 3277(j)(1), Exception 2, as suggested would create a conflict with Subsection 2940.6(b) which was outside the scope of this rulemaking proposal. The Board therefore declines to accept this proposal.

Comment No. 2:

Reference Subsection 3277(m): Does Subsection (m) include high-voltage transmission towers? If so, it is impractical to require ladder safety systems on high-voltage transmission towers; however, alternative fall protection methods such as double-legged lanyards, or the use of a movable self-retracting lanyard on a shepherd's hook type device could be used for 100% fall protection.

Response:

The subject of fall protection for high-voltage transmission towers is covered more specifically in HVESO Subsection 2940.6(b); thus, this suggestion is outside the scope of this rulemaking.

The Board thanks Mr. Brooks for his interest and participation in the rulemaking process.

Bill Taylor, Legislative Committee Chairperson, Public Agency Safety Management Association (PASMA), by e-mail/letter dated June 5, 2009.

Comment No. 1A:

The commenter's first comment had two parts, which have been designated as Comment Nos. 1A and 1B. The first part stated that many of PASMA's member agencies have installed ladder safety systems which they consider to be a safer and more cost effective alternative to ladder cages. Some of their members have identified existing fixed ladders that they may have to retrofit with a cage extension in order to comply with the proposed clarifications to the standard. Alternatively, they could install a ladder safety system in these locations; however, they believe that a ladder safety system in combination with a ladder cage presents problems which he discusses in his next comment.

Response:

The requirement for a ladder cage extension is not new; the proposed rulemaking is merely a clarification of requirements currently illustrated in Figure 11. The Board recognized that some existing fixed ladders may pre-date the consensus standard (ASME A14.3-1956) upon which 29 CFR 1910.27 and Section 3277 are based. Furthermore, it is possible that some fixed ladders may have been installed without the required extension due to lack of clarity in the current standards; however, the economic impact is not anticipated to be significant (see Initial Statement of Reasons - Cost Impact on Private Persons or Businesses).

Please note also that Subsection (g)(4)(B) permits the use of alternate means of protection, including (g)(4)(B)(5) which permits the use of guardrail extensions as an alternative to ladder cage extensions.

Comment No. 1B:

Most PASMA members prefer the ladder safety system; however, he notes that installation of a ladder safety system in combination with a ladder cage presents problems. For example, the requirements of Section 3277(k) for ladder extensions make it difficult for employees to exit the top of a ladder at parapets and landings if a ladder safety system rail is installed on the ladder center line.

Response:

Subsection (m) permits the use of ladder safety systems on towers, water tanks and chimney ladders over 20 feet in unbroken length in lieu of cage protection; however, the use of ladder safety systems in combination with cages is not required. Moreover, the Board proposes to clarify the option to use ladder safety systems in lieu of cages by relocating the substance of an existing exception in (g)(2) [“(except as provided under subsection (m)(5)”] as a new Exception 3 to Subsection (g)(2).

Comment No. 2:

The accident information provided in the Initial Statement of Reasons is insufficient to determine whether the requirement for ladder cage extensions would have prevented the accident that prompted this rulemaking. This calls into question the necessity for the proposed changes.

Response:

The necessity for the proposed rulemaking was established by an ad hoc advisory committee composed of stakeholders (management and labor) and other interested parties. This proposal would not have been advanced without a determination of necessity. The Board therefore declines to revisit that matter at this stage of the rulemaking process.

Comment No. 3:

The commenter cited a 2004 British study¹ which questions the effectiveness of fall protection provided by ladder cages and wells. The commenter opines that US standards are biased toward cage systems rather than personal fall arrest systems. Based on the conclusions of the British study, PASMA believes that ladder safety systems are preferable for providing positive fall protection both in terms of cost and efficacy, and recommends that the proposed requirements for cages and wells on fixed ladders be abandoned.

Response:

The current and proposed fixed ladder standards are based on counterpart federal standards, 29 CFR 1910, Subpart D, Walking-Working Surfaces. The federal standards are based on ANSI A14.3, American National Standard for Fixed Ladders. The Board is obligated by Labor Code Section 142.3 to adopt standards that are at least as effective as counterpart federal standards.

Board staff also notes that UK ladder cage construction standards appear to differ significantly from federal and California cage construction standards, particularly with regard to vertical bar spacing. California standards require closer vertical bar spacing (maximum 9.5" centers versus approximately 90 degree spacing in the UK). This closer spacing of vertical bars should better contain and protect the worker in the event of a fall. Thus Board staff is of the opinion that conclusions of the study, based largely on UK ladder cage construction, cannot be directly compared with the effectiveness of US ladder cages. Nonetheless, as noted in the response to Comment No. 1B, the Board is proposing to clarify the option to use a ladder safety system in lieu of cages and wells (this option is also contained in the federal standards).

To abandon the requirement for cages and wells on fixed ladders in favor of ladder safety systems is outside the scope of this rulemaking and would raise questions about the equivalency of state standards with counterpart federal standards. The Board therefore declines to make changes to the proposal based on this comment.

Comment No. 4:

The commenter states that if the intent of the proposal is to reduce the likelihood of an employee who has already fallen off a fixed ladder that is equipped with a cage from falling over the guardrail on a platform at the bottom of the cage, then the proposal should offer an alternative to extending the cage to the guardrail. He suggested that an option should be provided that would permit the installation of a higher guardrail on the platform at the bottom of the cage.

¹ Research Report 258: "Preliminary Investigation into the Fall-Arresting Effectiveness of Ladder Safety Hoops," prepared by Safety Squared for the Health & Safety Executive, published 2004 by Her Majesty's Stationary Office, Norwich, UK.

Response:

This option is already provided in the proposal in Subsection (g)(4)(B)(5).

The Board thanks Mr. Taylor and PASMA for their interest and participation in the rulemaking process.

Mr. Ken Nishiyama Atha, Regional Administrator, U.S. Department of Labor, Occupational Safety and Health Administration, Region IX, by letter dated May 21, 2009.

Comment:

Federal OSHA indicated it had reviewed the proposed changes and concluded that the proposed changes provide protection at least as effective as the federal standard.

Response:

The Board thanks Mr. Atha, and Federal OSHA for their input and for their participation in the rulemaking process.

II. Oral Comments

Oral comments received at the June 18, 2009, Public Hearing in Oakland, California.

Bill Taylor, Legislative Committee Chairperson, representing Public Agency Safety Management Association (PASMA).

Comment No. 1:

Subsection (k) prescribes that the distance between the side rails shall not exceed 24 inches at the top of the ladder where the employee must step through the ladder at a parapet or landing. If a ladder safety system is provided in combination with a ladder cage, some larger workers may not fit, and there is a danger of the workers unhooking, which would defeat the purpose of the safety system. The commenter suggested that the distance between side rails be extended to 36 inches to avoid that problem.

Response:

Ladder safety systems are not required to be used in combination with ladder cages. See response to PASMA written Comment No. 1B above.

Comment No. 2:

Mr. Taylor believes that workers prefer a harness system rather than a safety cage.

Response:

Ladder safety systems (harness systems) are a permissible alternative to safety cages under Subsection 3277(m).

Comment No. 3:

Mr. Taylor suggested also that the platform guardrail be extended higher rather than extending the cage to the guardrail.

Response:

See response to PASMA written Comment No. 4 above.

The Board thanks Mr. Taylor and PASMA for their interest and participation in the rulemaking process.

John Vocke, Attorney, representing Pacific Gas & Electric Company.

Comment:

Mr. Vocke is of the opinion that ladder safety systems provide more effective protection than ladder cages and therefore recommended that ladder safety systems currently permitted for tower, water tank, and chimney ladders [Subsection (m)] be extended to all fixed ladders.

Response:

ANSI A14.3-2002, Section 4.1 permits ladder safety systems to be used in lieu of cages in all cases; however, this is not currently permitted by federal standard 29 CFR 1910.27, with which California standards must be at least as effective. The Board notes that the advisory committee discussed this proposal and declined to extend the option to use ladder safety systems to all fixed ladders; although its discussion did not rule-out doing so at a future date. The Board therefore believes that such a modification of the proposal at this time would be contrary to the committee consensus. The Board therefore declines at this time to go beyond the provisions of the federal standard.

The Board thanks Mr. Vocke and PG&E for their interest and participation in the rulemaking process.

ADDITIONAL DOCUMENTS RELIED UPON

None.

ADDITIONAL DOCUMENTS INCORPORATED BY REFERENCE

None.

DETERMINATION OF MANDATE

This standard does 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.