

**OCCUPATIONAL SAFETY  
AND HEALTH STANDARDS BOARD**

2520 Venture Oaks Way, Suite 350  
Sacramento, CA 95833  
(916) 274-5721  
FAX (916) 274-5743  
[www.dir.ca.gov/oshsb](http://www.dir.ca.gov/oshsb)

**NOTICE OF PROPOSED MODIFICATIONS TO****CALIFORNIA CODE OF REGULATIONS**

**TITLE 8: Division 1, Chapter 4, Subchapter 4, Article 15, Sections 1610.3 and 1616.3 of the Construction Safety Orders; Subchapter 7, Article 91, Section 4885 and Article 98, New Section 4993.1 and Sections 4999 and 5001 of the General Industry Safety Orders**

**Work Area Control (Crane Swing Radius Hazards)**

Pursuant to Government Code Section 11346.8(c), the Occupational Safety and Health Standards Board (Standards Board) gives notice of the opportunity to submit written comments on the above-named regulations in which further modifications are being considered as a result of public comments and/or Board staff evaluation.

On September 20, 2012, the Occupational Safety and Health Standards Board held a Public Hearing to consider revisions to Title 8, Division 1, Chapter 4, Subchapter 4, Article 15, Sections 1610.3 and 1616.3 of the Construction Safety Orders; Subchapter 7, Article 91, Section 4885 and Article 98, New Section 4993.1 and Sections 4999 and 5001 of the General Industry Safety Orders.

The Standards Board received written comments and no oral comments on the proposed amendments. The proposed regulations have been modified as a result of these comments.

Pursuant to Government Code Section 11346.8(d), the Standards Board gives notice of the opportunity to submit written comments concerning the addition to the above-named rulemaking file of the following supporting documents and/or information as additional documents relied upon:

1. ASME B30.3-1996, American National Standard: Construction Tower Cranes, page 7, definition of "*radius (load)*." American Society of Mechanical Engineers, 345 East 47<sup>th</sup> Street, New York, NY 10017.
2. ASME B30.4-2003, American National Standard: Portal, Tower, and Pedestal Cranes, page 4, definition of "*radius (load)*." American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016.
3. ASME B30.22-2010, American National Standard: Articulating Boom Cranes, page 6, definition of "*load radius*." American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016.

A copy of the full text with the modifications clearly indicated is attached for your information. In addition, a summary of all written comments regarding the original proposal and responses is included.

Any written comments must be related to these modifications and be received by 5:00 p.m. on **November 9, 2012** at the Occupational Safety and Health Standards Board's Office, 2520 Venture Oaks Way, Suite 350, Sacramento, California 95833 or submitted by fax at (916) 274-5743 or e-mailed at

oshsb@dir.ca.gov. This proposal will be scheduled for adoption at a future Business Meeting of the Occupational Safety and Health Standards Board.

The Occupational Safety and Health Standards Board's rulemaking file on the proposed action is open to public inspection Monday through Friday, from 8:00 a.m. to 4:30 p.m. at the Standards Board's Office, 2520 Venture Oaks Way, Suite 350, Sacramento, California.

Inquiries concerning the proposed modifications may be directed to the Executive Officer, Marley Hart at (916) 274-5721.

OCCUPATIONAL SAFETY AND HEALTH  
STANDARDS BOARD

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Marley Hart, Executive Officer

Date: October 23, 2012

## Proposed Modifications

(Modifications for new language are shown in **bold** and double underscored and deleted language are shown in **bold** and double striked-out)

**STANDARDS PRESENTATION  
TO  
CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

Attachment No. 1

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PROPOSED STATE STANDARD,  
TITLE 8, DIVISION 1, CHAPTER 4

TITLE 8: Division 1, Chapter 4, Subchapter 4. Construction Safety Orders  
Article 15. Cranes and Derricks in Construction

Amend Section 1610.3 as follows:

§1610.3. Definitions.

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Qualified rigger is a rigger who meets the criteria for a qualified person.

Radius (Load). The horizontal distance from the center of rotation of a crane or derrick to the center of the vertical hoist line, **hook shank or pin**, or tackle with load applied.

Range control limit device. A device that can be set by an equipment operator to limit movement of the boom or jib tip to a plane or multiple planes.

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

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PROPOSED STATE STANDARD,  
TITLE 8, DIVISION 1, CHAPTER 4

TITLE 8: Division 1, Chapter 4, Subchapter 4. Construction Safety Orders  
Article 15. Cranes and Derricks in Construction

Amend Section 1616.3 as follows:

§1616.3. Work Area Control.

(a) Swing radius hazards.

(1) The requirements ~~in subsection (a)(2)~~ of this section apply where there are accessible areas in which the equipment's rotating superstructure (~~whether permanently or temporarily mounted~~) poses a hazard ~~reasonably foreseeable risk~~ of:

(A) Striking and injuring an employee; or

(B) Pinching/crushing an employee against another part of the equipment or another object.

(2) To prevent employees from entering these hazard areas, the employer shall:

(A) Train each employee assigned to work on or near the equipment ("authorized personnel") in how to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.

(B) Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas.

EXCEPTION: When the employer can demonstrate that it is ~~neither~~ not feasible to erect such barriers on the ground ~~nor~~ or on the equipment, the hazard areas shall be clearly marked by a combination of warning signs (such as "Danger - Swing/Crush Zone") and high visibility markings on the equipment that identify the hazard areas. The markings shall be visible to employees from outside the hazard area. In addition, the employer shall train each employee to understand what these markings signify.

(3) Protecting employees in the hazard area.

(A) Before an employee goes to a location in the hazard area that is out of view of the operator, the employee (~~or someone instructed by the employee~~) shall inform ~~ensure that~~ the operator is ~~informed~~ that he/she is going to that location.

(B) ~~When~~ Where the operator ~~knows~~ has been informed of employee entry ~~that an employee went~~ to a location covered by subsection (a)(1) ~~of this section~~, the operator shall not rotate the superstructure until the operator is informed by the employee or visually confirms ~~in accordance with a prearranged system of communication~~ that the employee has exited the location ~~is in a safe position~~ and is in a safe position.

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PROPOSED STATE STANDARD,  
TITLE 8, DIVISION 1, CHAPTER 4

~~(b) When there is a potential for accidental contact by cranes operating within the boom swing radii of one another, the employer shall ensure effective communication to notify crane operators and signal persons of the presence of other cranes to coordinate operations.~~

~~(1) Where two-way radios are used, a dedicated frequency shall be provided for communication among operators.~~

Where any part of a crane/derrick is within the load radius of another crane/derrick, the controlling entity shall institute a system to coordinate operations. If there is no controlling entity, the employer (if there is only one employer operating the multiple pieces of equipment) shall institute such a system.

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

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PROPOSED STATE STANDARD,  
TITLE 8, DIVISION 1, CHAPTER 4

TITLE 8: Division 1, Chapter 4, Subchapter 7. General Industry Safety Orders  
Group 13. Cranes and Other Hoisting Equipment  
Article 91. Definitions

Amend Section 4885 as follows:

§4885. Definitions.

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**Overhead Loads.** For the purpose of Group 13 Regulations, overhead loads are loads either passed or suspended directly over employee-occupied work-spaces or passageways.

**Radius (Load).** The horizontal distance from the center of rotation of a crane or derrick to the center of the vertical hoist line, hook shank or pin, or tackle with load applied ~~freely suspended hook or load.~~

**Rated Load.** The maximum load for which a crane or individual hoist is designed and built by the manufacturer and shown on the equipment nameplate(s) or load capacity chart.

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NOTE: Authority and reference cited: Section 142.3, Labor Code.

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PROPOSED STATE STANDARD,  
TITLE 8, DIVISION 1, CHAPTER 4

TITLE 8: Division 1, Chapter 4, Subchapter 7. General Industry Safety Orders  
Group 13. Cranes and Other Hoisting Equipment  
Article 98. Operating Rules

Add new Section 4993.1 as follows:

§4993.1. Work Area Control.

(a) Swing radius hazards.

(1) The requirements of this section apply where there are accessible areas in which the equipment's rotating superstructure poses a ~~hazard reasonably foreseeable risk~~ of:

(A) Striking and injuring an employee; or

(B) Pinching/crushing an employee against another part of the equipment or another object.

(2) To prevent employees from entering these hazard areas, the employer shall:

(A) Train each employee assigned to work on or near the equipment ("authorized personnel") in how to recognize struck-by and pinch/crush hazard areas posed by the rotating superstructure.

(B) Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas.

EXCEPTION: When the employer can demonstrate that it is not feasible to erect such barriers on the ground or on the equipment, the hazard areas shall be clearly marked by a combination of warning signs (such as "Danger - Swing/Crush Zone") and high visibility markings on the equipment that identify the hazard areas. The markings shall be visible to employees from outside the hazard area. In addition, the employer shall train each employee to understand what these markings signify.

(3) Protecting employees in the hazard area.

(A) Before an employee goes to a location in the hazard area that is out of view of the operator, the employee shall inform the operator that he/she is going to that location.

(B) When the operator has been informed of employee entry to a location covered by subsection (a)(1), the operator shall not rotate the superstructure until the operator is informed by the employee or visually confirms that the employee has exited the location **and is in a safe position**.

(b) Where any part of a crane/derrick is within the load radius of another crane/derrick, the controlling entity shall institute a system to coordinate operations. If there is no controlling entity, the employer (if there is only one employer operating the multiple pieces of equipment) shall institute such a system.

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

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PROPOSED STATE STANDARD,  
TITLE 8, DIVISION 1, CHAPTER 4

TITLE 8: Division 1, Chapter 4, Subchapter 7. General Industry Safety Orders  
Group 13. Cranes and Other Hoisting Equipment  
Article 98. Operating Rules

Amend Section 4999 as follows:

§4999. Handling Loads.

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(j) ~~[Reserved] Where a rotating crane is positioned to operate in areas where persons may be caught between rotating parts of the crane and outside obstructions or parts of rotating machine deck and nonrotating parts of crane, those danger areas shall be barricaded or other positive means shall be taken to prevent traffic and workers, except the operator from entering such areas while the crane is operating.~~

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

Amend Section 5001 as follows:

§5001. Signals.

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(f) [Reserved]

~~(1) When there is a potential for accidental contact by cranes operating within the boom swing radii of one another, the employer shall ensure effective communication to notify crane operators and signal persons of the presence of other cranes.~~

~~(2) Where two way radios are used, a dedicated frequency shall be provided for communication among operators.~~

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

# **SUMMARY OF AND RESPONSES TO COMMENTS**

## **Summary and Responses to Oral and Written Comments**

### **I. Written Comments**

Bradley Closson, President, CRAFT Forensic Services, by e-mail dated August 6, 2012.

#### **Comment No. 1:**

Regarding Sections 1610.3 and 4885, Definitions, “Radius (Load),” Mr. Closson commented that some cranes covered by these standards, certain articulating boom cranes for example, do not have a hoist line; thus, the proposed definition is not adequate for all cranes covered by the proposed standard. He recommended the definition be modified to be from the center of rotation of the crane or derrick to the center of the crane hook shank or pin, with the load applied. This modification is based on the definition in B30.22, Articulating Boom Cranes.

#### **Response:**

The Board accepts this comment and proposes to modify the definition of “Radius (Load)” to better encompass all types of cranes subject to these standards.

#### **Comment No. 2:**

Regarding Section 1616.3, Work Area Control, subsection (a)(1), the term “accessible” is unclear; i.e. is this access from the ground, or from a location on the crane’s superstructure? The commenter recommends that this be clarified.

#### **Response:**

The Board is of the opinion that limiting the hazard zone to ground level may not protect employees working on the non-rotating carrier or deck of the crane who might still be subject to being struck, pinched or crushed by the rotating portion of the crane superstructure. Subsections (a)(1)(A) and (B) sufficiently clarify the hazard. The Board, therefore, declines to change the proposal in this regard.

#### **Comment No. 3:**

Regarding Section 1616.3, Work Area Control, subsection (a)(1), “reasonably foreseeable risk”, this term is vague and lacks clarity. Furthermore, the crane safety orders address hazards, not risks. The commenter recommends this portion be clarified.

#### **Response:**

The Board accepts this comment and proposes to clarify Section 1616.3(a)(1) and corresponding Section 4993.1(a)(1), accordingly.

Comment No. 4:

Regarding Section 1616.3, Work Area Control, subsection (a)(2) which reads: “To prevent employees from entering these hazard areas, the employer shall:...” The commenter opines that the following subsections only require training and warnings, and will not prevent employees from entering hazard areas. He recommends that subsection (a)(2) be modified to read: “To alert employees of the hazards in these areas, the employer shall:...”

Response:

The subsections following subsection (a)(2) describe the necessary precautions. Furthermore, changing from “prevent” to “alert” could be argued as not being at least as effective as the federal standard. The Board, therefore, declines to modify the proposal pursuant to this comment.

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

Gerald Fulghum, CSP, CHST, by e-mail dated September 6, 2012.

Comment:

Regarding use of “reasonably foreseeable risk” [in Sections 1616.3(a)(1) and 4993.1(a)(1)], the commenter opines that this term is fraught with uncertainty and lacks clarity. He recommends that verbiage be modified by striking “reasonably foreseeable” in order to make the standard clear, concise and enforceable.

Response:

The Board accepts this comment. See the response to Mr. Closson’s Comment No. 3.

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

David Shiraishi, MPH, Oakland Area Director, U.S. Dept. of Labor, Occupational Safety and Health Administration (OSHA), by letter dated September 19, 2012.

Comment:

A side-by-side comparison with 1926.1424(a)(3)(ii) indicates that Sections 1616.3(a)(3)(B) and 4993.1(a)(3)(B) omit “in a safe position” which is contained in the federal verbiage. The Area Director recommends that “in a safe position” be inserted into the text to make the proposal commensurate with the federal standard.

Response:

The Board accepts this comment and will revise the last sentences of Sections 1616.3(a)(3)(B) and 4993.1(a)(3)(B) to include “and is in a safe position” as requested by the OSHA Oakland Area Office.

The Board thanks Mr. Shiraishi and OSHA for their participation in the rulemaking process.

## II. Oral Comments

No oral comments were received at the September 20, 2012, Public Hearing in Sacramento, California.