

Occupational Safety and Health Standards Board

Public Meeting, Public Hearing and
Business Meeting

May 20, 2021

Via teleconference / videoconference

Board Meeting Packet

Occupational Safety and Health Standards Board

Meeting Agenda

DEPARTMENT OF INDUSTRIAL RELATIONS
Occupational Safety and Health Standards Board
2520 Venture Oaks Way, Suite 350
Sacramento, CA 95833
Tel: (916) 274-5721 Fax: (916) 274-5743
www.dir.ca.gov/oshsb



MISSION STATEMENT

The mission of the Occupational Safety and Health Standards Board is to promote, adopt, and maintain reasonable and enforceable standards that will ensure a safe and healthful workplace for California workers.

May 20, 2021 at 10:00 a.m.
TELECONFERENCE AGENDA

PUBLIC MEETING, PUBLIC HEARING AND BUSINESS MEETING
OF THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

PLEASE NOTE: In accordance with [Executive Order N-29-20](#), and [Executive Order N-33-20](#), the May Board Meeting will be conducted via teleconference.

Attend the meeting via Video-conference:

1. Go to www.webex.com
2. Select "Join"
3. Enter the meeting information: **268 984 996**
4. Enter your name and email address then click "Join Meeting"
5. Video-conference will be opened to the public at 9:50 a.m.

Attend the meeting via Teleconference:

1. Dial (844) 992-4726
2. When prompted, enter **268-984-996**
3. When prompted for an Attendee ID, press #
4. Teleconference will be opened to the public at 9:50 a.m.

Live video stream and audio stream (English and Spanish):

1. Go to <https://videobookcase.com/california/oshsb/>
2. Video stream and audio stream will launch as the meeting starts at 10:00 a.m.

Public Comment Queue:

Stakeholders who wish to comment on agenda items may submit a request to be added to the public comment queue. Please provide the following information*: 1) name; 2) affiliation; 3) comment topic; and 4) phone number (if not attending via Webex).

**Information requested is voluntary and not required to address the Board.*

In advance of the meeting: Email the requested information to OSHSB@dir.ca.gov.

During the meeting: Email the requested information to OSHSB@dir.ca.gov, request to speak via Webex “Chat” function, or dial 916-274-5721 to be placed in the queue.

**NOTE: In accordance with [Executive Order N-29-20](#),
Board Members will participate via video-conference and/or teleconference.**

I. **CALL TO ORDER AND INTRODUCTIONS**

II. **PUBLIC MEETING (Open for Public Comment)**

This portion of the Public Meeting is open to any interested person to propose new or revised standards to the Board or to make any comment concerning occupational safety and health (Labor Code Section 142.2). *The Board is not permitted to take action on items that are not on the noticed agenda, but may refer items to staff for future consideration.*

This portion of the meeting is also open to any person who wishes to address the Board on any item on today’s Business Meeting Agenda (Government Code Section 11125.7).

Any individual or group planning to make a presentation during the Public Meeting is requested to contact Sarah Money, Executive Assistant, or Christina Shupe, Executive Officer, at (916) 274-5721 in advance of the meeting so that any logistical concerns can be addressed.

A. PUBLIC COMMENT

B. ADJOURNMENT OF THE PUBLIC MEETING

III. **PUBLIC HEARING**

A. EXPLANATION OF PROCEDURES

B. PROPOSED SAFETY ORDERS (Revisions, Additions, Deletions)

1. **TITLE 8:** **CONSTRUCTION INDUSTRY SAFETY ORDERS**
Subchapter 4, Article 2, Definitions, section 1504;
Article 12, Pile Driving and Pile Extraction, section 1600;
Article 15, Cranes and Derricks in Construction,
sections 1610, 1610.1, 1610.2, 1610.3, 1610.4, 1610.5,
1610.6, 1610.7, 1610.8, 1610.9, 1611, 1611.1, 1611.2,
1611.3, 1611.4, 1611.5, 1612, 1612.1, 1612.2, 1612.3,
1612.4, 1613, 1613.1, 1613.2, 1613.3, 1613.4, 1613.5,
1613.6, 1613.7, 1613.8, 1613.9, 1613.10, 1613.11, 1613.12,
1614, 1615, 1615.1, 1615.2, 1615.3, 1616, 1616.1, 1616.2,
(continues on next page)

CONSTRUCTION INDUSTRY SAFETY ORDERS (cont.)

1616.3, 1616.4, 1616.5, 1616.6, 1616.7, 1617, 1617.1, 1617.2, 1617.3, 1618, 1618.1, 1618.2, 1618.3, 1618.4, 1619, 1619.1, 1619.2, 1619.3, 1619.4, and 1619.5; and Article 28, Miscellaneous Construction Tools and Equipment, section 1694

ELECTRICAL SAFETY ORDERS

Subchapter 5, Group 2, High-Voltage Electrical Safety Orders Article 37, Provisions for Preventing Accidents Due to Proximity to Overhead Lines, section 2946

GENERAL INDUSTRY SAFETY ORDERS

Subchapter 7, Group 1, General Physical Conditions and Structures Orders, Article 1, Definitions, section 3207; Group 13, Cranes and Other Hoisting Equipment, new sections 4880, 4881, 4883; section 4884; new section 4884.1; section 4885; Article 93, Boom-Type Mobile Cranes, section 4924; new section 4928.1; Article 94, Hydraulic Cranes and Excavators, section 4949; Article 95, Derricks, new section 4959; section 4960; new sections 4960.1, 4960.2, 4960.3, 4960.4; section 4961; and new section 4962.1; Article 96, Tower Cranes, section 4965; new section 4965.1; sections 4966, 4968; new sections 4968.1, 4968.2; New Article 97.1, Floating Cranes/Derricks and Land Cranes/Derricks on Barges, new sections 4988.1, 4988.2, 4988.3, 4988.4, 4988.5, 4988.6, 4988.7, 4988.8; Article 98, Operating Rules, section 4991; new section 4991.1; sections 4994, 4999, 5001; new sections 5001.1, 5001.2, 5001.3; section 5002; new sections 5003.1, 5003.2, 5003.3, 5003.4; sections 5004, 5005, 5006.1; new section 5006.2; section 5008; new sections 5008.1, 5010, 5010.1, 5010.2, 5010.3, 5010.4, 5011, 5012; New Article 98.1, Safety Devices and Operational Aids, new sections 5017, 5018; Article 99, Testing, section 5022; Article 100, Inspection and Maintenance, section 5031; new sections 5031.1, 5031.2, 5031.3, 5033.1, 5036, 5037; and Group 26, Article 153, Commercial Diving Operations, section 6060

[Proposal to Consolidate Construction Safety Orders, Article 15 \(Cranes and Derricks in Construction\), into General Industry Safety Orders, Group 13 \(Cranes and Other Hoisting Equipment\)](#)

- C. PUBLIC COMMENT
- D. ADJOURNMENT OF THE PUBLIC HEARING

IV. **BUSINESS MEETING – All matters on this Business Meeting agenda are subject to such discussion and action as the Board determines to be appropriate.**

The purpose of the Business Meeting is for the Board to conduct its monthly business.

- A. PROPOSED EMERGENCY SAFETY ORDER FOR RE-ADOPTION (GOV. CODE SEC. 11346.1)
 - 1. TITLE 8: **GENERAL INDUSTRY SAFETY ORDERS**
Chapter 4, Subchapter 7, new sections 3205, 3205.1, 3205.2, 3205.3, and 3205.4
COVID-19 Prevention
- B. PROPOSED VARIANCE DECISIONS FOR ADOPTION
 - 1. **Consent Calendar**
- C. REPORTS
 - 1. Division Update
 - 2. Legislative Update
 - 3. Executive Officer’s Report
- D. NEW BUSINESS
 - 1. Future Agenda Items

Although any Board Member may identify a topic of interest, the Board may not substantially discuss or take action on any matter raised during the meeting that is not included on this agenda, except to decide to place the matter on the agenda of a future meeting. (Government Code sections 11125 & 11125.7(a).).

- E. CLOSED SESSION
 - 1. Western States Petroleum Association (WSPA) v. California Occupational Safety and Health Standards Board (OSHSB), et al. United States District Court (Eastern District of California) Case No. 2:19-CV-01270

2. WSPA v. OSHSB, et al., County of Sacramento, CA Superior Court Case No. 34-2019-00260210
 3. National Retail Federation, et. al., v OSHSB, et. al., County of San Francisco, CA Superior Court Case No. CGC-20-588367
 4. Western Growers Association, California Farm Bureau Federation, et. al. v OSHSB, et al., County of San Francisco, CA Superior Court Case No. CPF-21-517344
 5. Personnel
- F. RETURN TO OPEN SESSION
1. Report from Closed Session
- G. ADJOURNMENT OF THE BUSINESS MEETING

Next Meeting: June 17, 2021
Teleconference and Video-conference
(In accordance with Executive Orders [N-29-20](#) and [N-33-20](#))
10:00 a.m.

CLOSED SESSION

1. If necessary, consideration of personnel matters. (Government Code section 11126(a)(1)).
2. If necessary, consideration of pending litigation pursuant to Government Code section 11126(e)(1).

PUBLIC COMMENT

In addition to public comment during Public Hearings, the Occupational Safety and Health Standards Board (Board) affords an opportunity to members of the public to address the Board on items of interest that are either on the Business Meeting agenda, or within the Board's jurisdiction but are not on the noticed agenda, during the Public Meeting. The Board is not permitted to take action on items that are not on the noticed agenda, but may refer items to staff for future consideration. The Board reserves the right to limit the time for speakers.

DISABILITY ACCOMMODATION NOTICE

Disability accommodation is available upon request. Any person with a disability requiring an accommodation, auxiliary aid or service, or a modification of policies or procedures to ensure effective communication and access to the public hearings/meetings of the Occupational Safety and Health Standards Board should contact the Disability Accommodation Coordinator at (916) 274-5721 or the state-wide Disability Accommodation Coordinator at 1-866-326-1616 (toll free). The state-wide Coordinator can also be reached through the California Relay Service, by dialing 711 or 1-800-735-2929 (TTY) or 1-800-855-3000 (TTY-Spanish).

Accommodations can include modifications of policies or procedures or provision of auxiliary aids or services. Accommodations include, but are not limited to, an Assistive Listening System (ALS), a Computer-Aided Transcription System or Communication Access Realtime Translation (CART), a sign-language interpreter, documents in Braille, large print or on computer disk, and audio cassette recording. Accommodation requests should be made as soon as possible. Requests for an ALS or CART should be made no later than five (5) days before the meeting.

TRANSLATION

Requests for translation services should be made no later than five (5) days before the meeting.

NOTE: Written comments may be emailed directly to oshsb@dir.ca.gov no later than 5:00 p.m. on the Tuesday prior to a scheduled Board Meeting.

Under Government Code section 11123, subdivision (a), all meetings of a state body are open and public, and all persons are permitted to attend any meeting of a state body, except as otherwise provided in that article. The Board Chair may adopt reasonable time limits for public comments in order to ensure that the purpose of public discussion is carried out. (Gov. Code, §11125.7, subd. (b).)

Pursuant to Executive Orders N-29-20 and N-35-20, certain provisions of the Bagley-Keene Open Meeting Act are suspended due to a State of Emergency in response to the COVID-19 pandemic. Consistent with the Executive Orders, this meeting of the Occupational Safety and Health Standards Board will be conducted remotely via video/teleconference only. None of the locations from which the Board Members will participate will be open to the public. Members of the public who wish to participate in the meeting may do so via livestream on our website at <https://videobookcase.com/california/oshsb/>. The video recording and transcript of this meeting will be posted on our website as soon as practicable.

For questions regarding this meeting, please call (916) 274-5721.

Occupational Safety and Health Standards Board

Public Hearing

Occupational Safety and Health Standards Board

PROPOSED SAFETY ORDERS (Revisions, Additions, Deletions)

Proposal to Consolidate
Construction Safety Orders,
Article 15 (Cranes and Derricks
in Construction), into
General Industry Safety Orders,
Group 13 (Cranes and
Other Hoisting Equipment)

**TITLE 8
CONSTRUCTION SAFETY ORDERS**

**VARIOUS SAFETY ORDERS AND SECTIONS
AS LISTED IN THE NOTICE**

**PROPOSAL TO CONSOLIDATE
CONSTRUCTION SAFETY ORDERS, ARTICLE 15
(CRANES AND DERRICKS IN CONSTRUCTION), INTO
GENERAL INDUSTRY SAFETY ORDERS, GROUP 13
(CRANES AND OTHER HOISTING EQUIPMENT)**

HYPERLINKS TO RULEMAKING DOCUMENTS:

[NOTICE / INFORMATIVE DIGEST](#)

[PROPOSED REGULATORY TEXT](#)

[INITIAL STATEMENT OF REASONS](#)

From: [Bradley Closson](#)
To: [DIR OSHSB](#)
Subject: CONSOLIDATION OF CRANE REQUIREMENTS - PUBLIC INPUT
Date: Friday, May 7, 2021 1:36:11 PM

CAUTION: [External Email]

This email originated from outside of our DIR organization. Do not click links or open attachments unless you recognize the sender and know the content is expected and is safe. If in doubt reach out and check with the sender by phone.

As a member of the group of crane "experts" that participated in developing portions of the proposed document almost a decade ago, I am amazed and saddened that our developed inputs are being presented in a manner that will degrade the existing crane regulations, present the regulated public with confusing and in some places contradictory requirements and remove previously regulated lifting systems from the safety regulations.

I have to assume that there is some "behind the scenes" motivation for this proposal, as its current content and presentation cannot be motivated by enhancing safe lifting equipment operations as, if it is approved, it will accomplish just the opposite.

I started to identify and correct the problematic issues in the proposal, but I found them to be too numerous and time consuming to address and I had no reason to believe that my inputs would be received by someone knowledgeable about crane operation safety.

I strongly recommend that the Board not approve this proposal and assign its further development/refinement to a staff member that has actually read and understands California's the current crane orders and the National Consensus standards they include.

If this is done the Board's reviewer will find that much of what is being proposed already exists, is more complete as currently enacted, is presented in clearer wording, and does not contain contradicting requirements between code sections.

If the Board does approve this proposal I predict it will increase the numbers of incorrect citations issued by the Division, decrease lifting operation safety by having confusing and conflicting code requirements and create an adverse economic impact on the regulated public by their having to appeal/defend against incorrect citations.

Bradley D. Closson
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CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

FEDERAL: §	STATE:	RATIONALE
<p>PART 1926—[AMENDED] Subpart A—General</p>		
<p>■ 1. The authority citation for subpart A of 29 CFR part 1926 is retained as follows: ...</p>		<p>CA cites authority at each section.</p>
<p>■ 2. Section 1926.6 is added to read as follows:</p>		
<p>§ 1926.6 Incorporation by reference.</p>	<p>§4884. <u>Scope Standards Incorporated by Reference.</u></p>	
<p>(a) The standards of agencies of the U.S. Government, and organizations which are not agencies of the U.S. Government which are incorporated by reference in this part, have the same force and effect as other standards in this part. Only the mandatory provisions (i.e., provisions containing the word “shall” or other mandatory language) of standards incorporated by reference are adopted as standards under the Occupational Safety and Health Act. The locations where these standards may be examined are as follows: (1) Offices of the Occupational Safety and Health Administration, U.S. Department of Labor, Frances Perkins Building, Washington, DC 20210. (2) The Regional and Field Offices of the Occupational Safety and Health Administration, which are listed in the U.S. Government Manual.</p>	<p>(a) <u>Cranes and derricks shall be designed, constructed, and installed in accordance with the following standards which are hereby incorporated by reference. Unless specified otherwise in this Group, these requirements apply to equipment that has a manufacturer-rated hoisting/lifting capacity of more than 2,000 pounds.</u></p>	<p>Per FR page 47919, this is primarily a “technical amendment,” relocating referenced standards from 1926.31 to 1926.6 for “organizational purposes.” The FR (page 47919) made the following statement: “OSHA is adding to the list of documents incorporated by reference those documents that are newly incorporated by reference in these final rules. The Federal Register approved these documents, which are listed as follows, for incorporation by reference as of November 8, 2010: ANSI B30.5–1968; ASME B30.2–2005; ASME B–30.5–2004; ASME B30.7–2001; ASME B30.14–2004; AWS D1.1/D1.1M:2002; ANSI/AWS D14.3–94; BS EN 13000:2004; BS EN 14439:2006; ISO 11660–1:2008(E); ISO 11660–2:1994(E); ISO 11660–3:2008(E); PCSA Std. No. 2 (1968); SAE J185 (May 2003); SAE J987 (Jun. 2003); and SAE J1063 (Nov. 1993).” Therefore, the CA crane standard will adopt these new standards as indicated below.</p>
<p>(b) The materials listed in paragraphs (g) through (ff) of this section are incorporated by reference in the corresponding sections noted as they exist on the date of the approval, and a notice of any change in these materials will be</p>		<p>Fed/state formatting difference.</p>

CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>published in the Federal Register. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.</p> <p>(c) Copies of standards listed in this section and issued by private standards organizations are available for purchase from the issuing organizations at the addresses or through the other contact information listed below for these private standards organizations. In addition, these standards are available for inspection at the National Archives and Records Administration (NARA). For information on the availability of these standards at NARA, telephone: 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. Also, the standards are available for inspection at any Regional Office of the Occupational Safety and Health Administration (OSHA), or at the OSHA Docket Office, U.S. Department of Labor, 200 Constitution Avenue, NW., Room N-2625, Washington, DC 20210; telephone: 202-693-2350 (TTY number: 877-889-5627).</p> <p>(d) [Reserved.]</p> <p>(e) [Reserved.]</p> <p>(f) [Reserved.]</p>		
<p>(g) The following material is available for purchase from the American Conference of Governmental Industrial Hygienists (ACGIH), 1330 Kemper Meadow Drive, Cincinnati, OH 45240; telephone: 513-742-6163; fax: 513-742-3355; e-mail: mail@acgih.org; Web site: http://www.acgih.org:</p>		<p>N/A for this RM</p>

CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>(1) Threshold Limit Values of Airborne Contaminants for 1970, 1970, IBR approved for § 1926.55(a) and Appendix A of § 1926.55.</p>		
<p>(h) The following material is available for purchase from the American National Standards Institute (ANSI), 25 West 43rd Street, Fourth Floor, New York, NY 10036; telephone: 212-642-4900; fax: 212-302-1286; e-mail: info@ansi.org; Web site: http://www.ansi.org/.</p> <p>(1) ANSI A10.3-1970, Safety Requirements for Explosive-Actuated Fastening Tools, IBR approved for § 1926.302(e).</p> <p>(2) ANSI A10.4-1963, Safety Requirements for Workmen’s Hoists, IBR approved for § 1926.552(c).</p> <p>(3) ANSI A10.5-1969, Safety Requirements for Material Hoists, IBR approved for § 1926.552(b).</p> <p>(4) ANSI A11.1-1965 (R1970), Practice for Industrial Lighting, IBR approved for § 1926.56(b).</p> <p>(5) ANSI A17.1-1965, Elevators, Dumbwaiters, Escalators, and Moving Walks, IBR approved for § 1926.552(d).</p> <p>(6) ANSI A17.1a-1967, Elevators, Dumbwaiters, Escalators, and Moving Walks Supplement, IBR approved for § 1926.552(d).</p> <p>(7) ANSI A17.1b-1968, Elevators, Dumbwaiters, Escalators, and Moving Walks Supplement, IBR approved for § 1926.552(d).</p> <p>(8) ANSI A17.1c-1969, Elevators, Dumbwaiters, Escalators, and Moving Walks Supplement, IBR approved for § 1926.552(d).</p> <p>(9) ANSI A17.1d-1970, Elevators, Dumbwaiters, Escalators, and Moving Walks</p>		<p>N/A for this RM</p>

CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>Supplement, IBR approved for § 1926.552(d). (10) ANSI A17.2–1960, Practice for the Inspection of Elevators (Inspector’s Manual), IBR approved for § 1926.552(d). (11) ANSI A17.2a–1965, Practice for the Inspection of Elevators (Inspector’s Manual) Supplement, IBR approved for § 1926.552(d). (12) ANSI A17.2b–1967, Practice for the Inspection of Elevators (Inspector’s Manual) Supplement, IBR approved for § 1926.552(d). (13) ANSI A92.2–1969, Vehicle Mounted Elevating and Rotating Work Platforms, IBR approved for §§ 1926.453(a) and 1926.453(b). (14) ANSI B7.1–1970, Safety Code for the Use, Care, and Protection of Abrasive Wheels, IBR approved for §§ 1926.57(g), 1926.303(b), 1926.303(c), and 1926.303(d). (15) ANSI B20.1–1957, Safety Code for Conveyors, Cableways, and Related Equipment, IBR approved for § 1926.555(a). (16) ANSI B56.1–1969, Safety Standards for Powered Industrial Trucks, IBR approved for § 1926.602(c). (17) ANSI J6.1–1950 (R1971), Rubber Insulating Line Hose, IBR approved for § 1926.951(a). (18) ANSI J6.2–1950 (R1971), Rubber Insulating Hoods, IBR approved for § 1926.951(a). (19) ANSI J6.4–1971, Rubber Insulating Blankets, IBR approved for § 1926.951(a). (20) ANSI J6.5–1971, Rubber Insulating Sleeves, IBR approved for § 1926.951(a). (21) ANSI J6.6–1971, Rubber Insulating Gloves, IBR approved for § 1926.951(a).</p>		
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CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>(22) ANSI J6.7–1935 (R1971), Rubber Matting for Use Around Electric Apparatus, IBR approved for § 1926.951(a).</p> <p>(23) ANSI O1.1–1961, Safety Code for Woodworking Machinery, IBR approved for § 1926.304(f).</p> <p>(24) ANSI Z35.1–1968, Specifications for Accident Prevention Signs, IBR approved for § 1926.200(i).</p> <p>(25) ANSI Z35.2–1968, Specifications for Accident Prevention Tags, IBR approved for § 1926.200(i).</p> <p>(26) ANSI Z49.1–1967, Safety in Welding and Cutting, IBR approved for § 1926.350(j).</p> <p>(27) ANSI Z87.1–1968, Practice for Occupational and Educational Eye and Face Protection, IBR approved for § 1926.102(a).</p> <p>(28) ANSI Z89.1–1969, Safety Requirements for Industrial Head Protection, IBR approved for § 1926.100(b).</p> <p>(29) ANSI Z89.2–1971, Industrial Protective Helmets for Electrical Workers, Class B, IBR approved for §§ 1926.100(c) and 1926.951(a).</p> <p>(i) [Reserved.]</p>		
<p>(j) The following material is available for purchase from the American Society for Testing and Materials (ASTM), ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA, 19428–2959; telephone: 610–832–9585; fax: 610–832–9555; e-mail: service@astm.org; Web site: http://www.astm.org/:</p> <p>(1) ASTM A370–1968, Methods and Definitions for Mechanical Testing and Steel Products, IBR approved for § 1926.1001(f).</p>		<p>N/A for this RM</p>

CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>(2) ASTM B117–1964, 50 Hour Test, IBR approved for § 1926.959(a). (3) ASTM D56–1969, Standard Method of Test for Flash Point by the Tag Closed Tester, IBR approved for § 1926.155(i). (4) ASTM D93–1969, Standard Method of Test for Flash Point by the Pensky Martens Closed Tester, IBR approved for § 1926.155(i). (5) ASTM D323–1958 (R1968), Standard Method of Test for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for § 1926.155(m).</p>		
<p>(k) The following material is available for purchase from the American Society of Agricultural and Biological Engineers (ASABE), 2950 Niles Road, St. Joseph, MI 49085; telephone: 269–429–0300; fax: 269–429–3852; e-mail: hq@asabe.org; Web site: http://www.asabe.org/: (1) ASAE R313.1–1971, Soil Cone Penetrometer, reaffirmed 1975, IBR approved for § 1926.1002(e).</p>		N/A for this RM
<p>(l) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016; telephone: 1–800–843–2763; fax: 973–882–1717; e-mail: infocentral@asme.org; Web site: http://www.asme.org/:</p>	<p>§4884. Scope <u>Standards Incorporated by Reference.</u> *** <u>(d) Cranes and derricks manufactured after July 7, 2011, until [consolidation effective date] shall be designed, constructed and installed in accordance with the following applicable American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) standards which are hereby incorporated by reference:</u></p>	<p>These standards became effective on July 7, 2011, per CSO Section 1610.2.</p>
<p>(1) ASME B30.2–2005, Overhead and Gantry</p>	<p><u>B30.2–2005, Overhead and Gantry Cranes</u></p>	

CALIFORNIA STANDARDS COMPARISON

Attachment No. 2

DATE: January 20, 2021

Page 7 of 252

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

Cranes (Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist), issued Dec. 30, 2005 (“ASME B30.2–2005”), IBR approved for § 1926.1438(b).	<u>(Top Running Bridge, Single or Multiple Girder, Top Running Trolley Hoist)</u>	
	<u>B30.3-1996, Construction Tower Cranes</u> <u>B30.4-1996, Portal, Tower, and Pedestal Cranes</u>	<i>[Ed note: feds did not update]</i>
(2) ASME B30.5–2004, Mobile and Locomotive Cranes, issued Sept. 27, 2004 (“ASME B30.5–2004”), IBR approved for §§ 1926.1414(b); 1926.1414(e); 1926.1433(b).	<u>B30.5–2004, Mobile and Locomotive Cranes</u>	
	<u>B30.6-1995, Derricks</u>	<i>[Ed note: feds did not update]</i>
(3) ASME B30.7–2001, Base-Mounted Drum Hoists, issued Jan. 21, 2002 (“ASME B30.7–2001”), IBR approved for § 1926.1436(e).	<u>B30.7–2001, Base-Mounted Drum Hoists</u>	
	<u>B30.8-1982, Floating Cranes and Floating Derricks</u> <u>B30.11-1980, Monorails and Underhung Cranes</u> <u>B30.13-1977, Controlled Mechanical Storage Cranes</u>	<i>[Ed note: feds did not update]</i>
(4) ASME B30.14–2004, Side Boom Tractors, issued Sept. 20, 2004 (“ASME B30.14-2004”), IBR approved for § 1926.1440(c).	<u>B30.14–2004, Side Boom Tractors</u>	
	<u>B30.17-1992, Overhead and Gantry Cranes (Top Running Bridge, Single Girder, Underhung Hoist)</u>	
(5) ASME Boiler and Pressure Vessel Code, Section VIII, 1968, IBR approved for §§ 1926.152(i), 1926.306(a), and 1926.603(a).		N/A for this RM
(6) ASME Power Boilers, Section I, 1968, IBR approved for § 1926.603(a).		N/A for this RM
(m) The following material is available for purchase from the American Welding Society		Group 13 incorporates ASME B30 standards in Section 4884. These standards are incorporated

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SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>(AWS), 550 N.W. LeJeune Road, Miami, Florida 33126; telephone: 1-800-443-9353; Web site: http://www.aws.org/;</p> <p>(1) AWS D1.1/D1.1M:2002, Structural Welding Code—Steel, 18th ed., ANSI approved Aug. 31, 2001 (“AWS D1.1/D1.1M:2002”), IBR approved for § 1926.1436(c).</p> <p>(2) ANSI/AWS D14.3-94, Specification for Welding Earthmoving and Construction Equipment, ANSI approved Jun. 11, 1993 (“ANSI/AWS D14.3-94”), IBR approved for §1926.1436(c).</p>		<p>by reference in ASME B30.5, sec. 5-0.3, and B30.3, section 3-0.3. Thus no need to duplicate them here.</p>
<p>(n) The following material is available for purchase from the British Standards Institution (BSI), 389 Chiswick High Road, London, W4 4AL, United Kingdom; telephone: +44 20 8996 9001; fax: +44 20 8996 7001; e-mail: cservices@bsigroup.com; Web site: http://www.bsigroup.com/;</p> <p>(1) BS EN 13000:2004, Cranes - Mobile Cranes, published Jan. 4, 2006 (“BS EN 13000:2004”), IBR approved for § 1926.1433(c).</p> <p>(2) BS EN 14439:2006, Cranes – Safety - Tower Cranes, published Jan. 31, 2007 (“BS EN 14439:2006”), IBR approved for § 1926.1433(c).</p>		<p>Group 13 incorporates ASME B30 standards in Section 4884. These standards are incorporated by reference in ASME B30.5, sec. 5-0.3, and B30.3, section 3-0.3. Thus no need to duplicate them here.</p>
<p>(o) The following material is available for purchase from the Bureau of Reclamation, United States Department of the Interior, 1849 C Street, NW., Washington DC 20240; telephone: 202-208-4501; Web site: http://www.usbr.gov/;</p> <p>(1) Safety and Health Regulations for Construction, Part II, Sept. 1971, IBR approved</p>		<p>N/A for this RM</p>

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SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>for § 1926.1000(f). (p) The following material is available for purchase from the California Department of Industrial Relations, 455 Golden Gate Avenue, San Francisco CA 94102; telephone: (415) 703-5070; email: info@dir.ca.gov; Web site: http://www.dir.ca.gov/: (1) Construction Safety Orders, IBR approved for § 1926.1000(f). (q) [Reserved.] (r) [Reserved.] (s) [Reserved.] (t) [Reserved.] (u) The following material is available for purchase from the Federal Highway Administration, United States Department of Transportation, 1200 New Jersey Ave., SE., Washington, DC 20590; telephone: 202-366-4000; Web site: http://www.fhwa.dot.gov/: (1) Manual on Uniform Traffic Control Devices, Millennium Edition, Dec. 2000, IBR approved for §§ 1926.200(g), 1926.201(a), and 1926.202. (v) The following material is available for purchase from the General Services Administration (GSA), 1800 F Street, NW., Washington, DC 20405; telephone: (202) 501-0800; Web site: http://www.gsa.gov/: (1) QQ-P-416, Federal Specification Plating Cadmium (Electrodeposited), IBR approved for § 1926.104(e). (w) The following material is available for purchase from the Institute of Makers of Explosives (IME), 1120 19th Street, NW., Suite</p>		
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CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>310, Washington, DC 20036; telephone: 202-429-9280; fax: 202-429-9280; e-mail: info@ime.org; Web site: http://www.ime.org/: (1) IME Pub. No. 2, American Table of Distances for Storage of Explosives, Jun. 5, 1964, IBR approved for § 1926.914(a). (2) IME Pub. No. 20, Radio Frequency Energy—A Potential Hazard in the Use of Electric Blasting Caps, Mar. 1968, IBR approved for § 1926.900(k).</p>		
<p>(x) The following material is available for purchase from the International Organization for Standardization (ISO), 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland; telephone: +41 22 749 01 11; fax: +41 22 733 34 30; Web site: http://www.iso.org/: (1) ISO 11660-1:2008(E), Cranes—Access, guards and restraints—Part 1: General, 2d ed., Feb. 15, 2008 (“ISO 11660-1:2008(E)”), IBR approved for § 1926.1423(c). (2) ISO 11660-2:1994(E), Cranes—Access, guards and restraints—Part 2: Mobile cranes, 1994 (“ISO 11660-2:1994(E)”), IBR approved for § 1926.1423(c). (3) ISO 11660-3:2008(E), Cranes—Access, guards and restraints—Part 3: Tower cranes, 2d ed., Feb. 15, 2008 (“ISO 11660-3:2008(E)”), IBR approved for § 1926.1423(c).</p>		<p>Group 13 incorporates ASME B30 standards in Section 4884. These standards are incorporated by reference in ASME B30.5, sec. 5-0.3, and B30.3, section 3-0.3. Thus no need to duplicate them here.</p>
<p>(y) The following material is available for purchase from the National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169; telephone: 617-770-3000; fax: 617-770-0700; Web site: http://www.nfpa.org/:</p>		<p>N/A for this RM</p>

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SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

<p>(1) NFPA 10A–1970, Maintenance and Use of Portable Fire Extinguishers, IBR approved for § 1926.150(c).</p> <p>(2) NFPA 13–1969, Standard for the Installation of Sprinkler Systems, IBR approved for § 1926.152(d).</p> <p>(3) NFPA 30–1969, The Flammable and Combustible Liquids Code, IBR approved for § 1926.152(c).</p> <p>(4) NFPA 80–1970, Standard for Fire Doors and Windows, Class E or F Openings, IBR approved for § 1926.152(b).</p> <p>(5) NFPA 251–1969, Standard Methods of Fire Test of Building Construction and Material, IBR approved for §§ 1926.152(b) and 1926.155(f).</p> <p>(6) NFPA 385–1966, Standard for Tank Vehicles for Flammable and Combustible Liquids, IBR approved for § 1926.152(g).</p> <p>(z) [Reserved.]</p>		
<p>(aa) The following material is available for purchase from the Power Crane and Shovel Association (PCSA), 6737 W. Washington Street, Suite 2400, Milwaukee, WI 53214; telephone: 1–800–369–2310; fax: 414–272–1170; Web site: http://www.aem.org/CBC/ProdSpec/PCSA/:</p> <p>(1) PCSA Std. No. 1, Mobile Crane and Excavator Standards, 1968, IBR approved for § 1926.602(b).</p> <p>(2) PCSA Std. No. 2, Mobile Hydraulic Crane Standards, 1968 (“PCSA Std. No. 2 (1968)”), IBR approved for §§ 1926.602(b), 1926.1433(a), and 1926.1501(a).</p> <p>(3) PCSA Std. No. 3, Mobile Hydraulic</p>		<p>Obsolete standards. PCSA standards have been superseded by ASME B30.5 standards which are incorporated by reference in Group 13, Section 4884. These standards are incorporated by reference in ASME B30.5, sec. 5-0.3.</p>

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<p>Excavator Standards, 1969, IBR approved for § 1926.602(b).</p>		
<p>(bb) [Reserved.] (cc) [Reserved.]</p>		
<p>(dd) The following material is available for purchase from the Society of Automotive Engineers (SAE), 400 Commonwealth Drive, Warrendale, PA 15096; telephone: 1-877-606-7323; fax: 724-776-0790; Web site: http://www.sae.org/: (1) SAE 1970 Handbook, IBR approved for § 1926.602(b). (2) SAE 1971 Handbook, IBR approved for § 1926.1001(h). (3) SAE J166-1971, Trucks and Wagons, IBR approved for § 1926.602(a). (4) SAE J168-1970, Protective Enclosures—Test Procedures and Performance Requirements, IBR approved for § 1926.1002(a). (5) SAE J185 (reaf. May 2003), Access Systems for Off-Road Machines, reaffirmed May 2003 (“SAE J185 (May 1993)”), IBR approved for § 1926.1423(c).</p>		<p>Group 13 incorporates ASME B30 standards in Section 4884. These standards are incorporated by reference in ASME B30.5, sec. 5-0.3, and B30.3, section 3-0.3. Thus no need to duplicate them here.</p>
<p>(6) SAE J236-1971, Self-Propelled Graders, IBR approved for § 1926.602(a). (7) SAE J237-1971, Front End Loaders and Dozers, IBR approved for § 126.602(a). (8) SAE J319b-1971, Self-Propelled Scrapers, IBR approved for § 1926.602(a). (9) SAE J320a-1971, Minimum Performance Criteria for Roll-Over Protective Structure for Rubber-Tired, Self-Propelled Scrapers, IBR approved for § 1926.1001(h). (10) SAE J321a-1970, Fenders for Pneumatic-</p>		<p>Not applicable for this RM.</p>

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<p>Tired Earthmoving Haulage Equipment, IBR approved for § 1926.602(a).</p> <p>(11) SAE J333a–1970, Operator Protection for Agricultural and Light Industrial Tractors, IBR approved for § 1926.602(a).</p> <p>(11) SAE J386–1969, Seat Belts for Construction Equipment, IBR approved for § 1926.602(a).</p> <p>(12) SAE J394–1971, Minimum Performance Criteria for Roll-Over Protective Structure for Rubber-Tired Front End Loaders and Rubber-Tired Dozers, IBR approved for § 1926.1001(h).</p> <p>(13) SAE J395–1971, Minimum Performance Criteria for Roll-Over Protective Structure for Crawler Tractors and Crawler-Type Loaders, IBR approved for § 1926.1001(h).</p> <p>(14) SAE J396–1971, Minimum Performance Criteria for Roll-Over Protective Structure for Motor Graders, IBR approved for § 1926.1001(h).</p> <p>(15) SAE J397–1969, Critical Zone Characteristics and Dimensions for Operators of Construction and Industrial Machinery, IBR approved for § 1926.1001(f).</p> <p>(16) SAE J743a–1964, Tractor Mounted Side Boom, 1964 (“SAE J743a–1964”), IBR approved for § 1926.1501(a).</p> <p>(17) SAE J959–1966, Lifting Crane Wire-Rope Strength Factors, 1966 (“SAE J959–1966”), IBR approved for § 1926.1501(a).</p>		
<p>(18) SAE J987 (rev. Jun. 2003), Lattice Boom Cranes—Method of Test, revised Jun. 2003 (“SAE J987 (Jun. 2003)”), IBR approved for § 1926.1433(c).</p>		<p>Group 13 incorporates ASME B30 standards in Section 4884. These standards are incorporated by reference in ASME B30.5, sec. 5-0.3, and B30.3, section 3-0.3. Thus no need to duplicate</p>

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<p>(19) SAE J1063 (rev. Nov. 1993), Cantilevered Boom Crane Structures—Method of Test, revised Nov. 1993 (“SAE J1063 (Nov. 1993)”), IBR approved for § 1926.1433(c).</p>		<p>them here.</p>
<p>(ee) The following material is available for purchase from the United States Army Corps of Engineers, 441 G Street, NW., Washington, DC 20314; telephone: 202-761-0011; e-mail: hqpublicaffairs@usace.army.mil; Web site: http://www.usace.army.mil/; (1) EM-385-1-1, General Safety Requirements, Mar. 1967, IBR approved for § 1926.1000(f).</p>		<p>N/A for this RM</p>
<p>(ff) The following material is available for purchase from standards resellers such as the Document Center Inc., 111 Industrial Road, Suite 9, Belmont, CA 94002; telephone: 650-591-7600; fax: 650-591-7617; e-mail: info@documentcenter.com; Web site: http://www.document-center.com/; (1) ANSI B15.1-1953 (R1958), Safety Code for Mechanical Power-Transmission Apparatus, revised 1958, IBR approved for §§ 1926.300(b)(2) and 1926.1501(a). (2) ANSI B30.2.0-1967, Safety Code for Overhead and Gantry Cranes, approved May 4, 1967, IBR approved for § 1926.1501(d).</p>		<p>N/A for this RM</p>
<p>(3) ANSI B30.5-1968, Crawler, Locomotive, and Truck Cranes, approved Dec. 16, 1968, IBR approved for §§ 1926.1433(a), 1926.1501(a), and 1926.1501(b).</p>	<p>§4884(d) <u>Cranes and derricks manufactured on or after July 7, 2011, until [consolidation effective date] shall be designed, constructed and installed in accordance with the following applicable American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) standards which are hereby incorporated by reference:</u></p>	<p>CA uses a more recent standard for crawlers, locomotive and truck cranes covered by ASME B30.5 editions as noted in Section 4884 subsections (c), (d) and (e).</p>

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	*** <u>B30.5–2004, Mobile and Locomotive Cranes</u>	
(4) ANSI B30.6–1969, Safety Code for Derricks, approved Dec. 18, 1967, IBR approved for § 1926.1501(e).	<u>(e) Cranes and derricks manufactured on or after [consolidation effective date] shall be designed, constructed and installed in accordance with the following applicable American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) standards which are hereby incorporated by reference:</u> *** <u>B30.6-2010, Derricks</u>	CA uses a more recent standard for derricks covered by ASME B30.6 editions as noted in Section 4884 subsections (c), (d) and (e).
Subpart C—General Safety and Health Provisions		
3. The authority citation for subpart C of 29 CFR part 1926 is retained as follows: ...		CA cites authority at each section.
§ 1926.31 [Reserved.] 4. Section 1926.31 is removed and reserved.		Section 1926.31, Incorporation by Reference, relocated to Subpart A, Section 1926.6. N/A for CA due to differences in formatting.
Subpart L—Scaffolds		
5. The authority citation for subpart L of 29 CFR part 1926 is revised to read as follows: ...		CA cites authority at each section.
6. Section 1926.450 is amended by revising paragraph (a) to read as follows:		
§ 1926.450 Scope, application, and definitions applicable to this subpart. (a) <i>Scope and application.</i> This subpart applies to all scaffolds used in workplaces covered by this part. It does not apply to crane or derrick suspended personnel platforms. The criteria for aerial lifts are set out exclusively in § 1926.453.		The fed verbiage deletes the clause "... which are covered by § 1926.550(g)." [Subpart N – Cranes, Derricks, Hoists, Elevators, and Conveyors] This is due to relocation of Cranes and Derricks to Subpart CC. This fed change is N/A for CA due to differences in formatting.
Subpart M—Fall Protection		
7. The authority citation for subpart M of 29 CFR part 1926 is revised to read as follows: ...		CA cites authority at each section.
8. Section 1926.500 is amended by revising		N/A for this RM.

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<p>paragraph (a)(2)(ii), adding paragraph (a)(3)(v), and revising paragraph (a)(4), to read as follows:</p>		
<p>§ 1926.500 Scope, application, and definitions applicable to this subpart. (a) * * * (2) * * * (ii) Requirements relating to fall protection for employees working on cranes and derricks are provided in subpart CC of this part. * * * * *</p>		<p>CA fall protection standards are horizontal.</p>
<p>(3) * * * (v) Criteria for steps, handholds, ladders, and grabrails/guardrails/railings required by subpart CC are provided in subpart CC. Sections 1926.502(a), (c) through (e), and (i) apply to activities covered under subpart CC unless otherwise stated in subpart CC. No other paragraphs of § 1926.502 apply to subpart CC. * * * * *</p>		<p>CA standards for stairs, ladders and guardrails are horizontal.</p>
<p>(4) Section 1926.503 sets forth requirements for training in the installation and use of fall protection systems, except in relation to steel erection activities and the use of equipment covered by subpart CC.</p>		<p>CA has horizontal training standards (which include fall protection) in Sections 1509 and 3203.</p>
<p>Subpart DD—Cranes and Derricks Used in Demolition and Underground Construction. [Removed]</p>		<p>Subpart DD has been removed per Fed. Reg. Vol. 77, No. 160, August 17, 2012, pg. 49749. CA applies the same standards to demo and underground construction as to any other type of construction.</p>
<p>Subpart N—Cranes, Derricks, Hoists, Elevators, and Conveyors</p>		
<p>■ 10. The authority citation for subpart N of 29 CFR part 1926 is revised to read as follows:</p>		<p>CA cites authority at each section.</p>

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Authority: ...		
■ 11. The heading to subpart N of 29 CFR part 1926 is revised to read as follows:		
Subpart N—Helicopters, Hoists, Elevators, and Conveyors *****		
§ 1926.550 [Redesignated as § 1926.1501]		
■ 12. Section 1926.550 is redesignated as § 1926.1501 in subpart DD.		Subpart DD has been removed (see above).
§ 1926.550 [Reserved]		
■ 13. Section 1926.550 is reserved. ■ 14. Section 1926.553 is amended by adding paragraph (c) to read as follows:		N/A for CA due to differences in formatting.
§ 1926.553 Base-mounted drum hoists. ***** (c) This section does not apply to base-mounted drum hoists used in conjunction with derricks. Base-mounted drum hoists used in conjunction with derricks must conform to § 1926.1436(e).		N/A for CA due to differences in formatting and precedence of orders.
Subpart O—Motorized Vehicles, Mechanical Equipment, and Marine Operations		
■ 15. The authority citation for subpart O of 29 CFR part 1926 is revised to read as follows: ...		CA cites authority at each section.
■ 16. Section 1926.600 is amended by revising paragraph (a)(6) to read as follows:		
§ 1926.600 Equipment. (a) General Requirements. ***	§2946. Provisions for Preventing Accidents Due to Proximity to Overhead Lines.	
(6) All equipment covered by this subpart shall comply with the following requirements when working or being moved in the vicinity of power lines or energized transmitters, except where electrical distribution and transmission	(a) General. No person, firm, or corporation, or agent of same, shall require or permit any employee to perform any function in proximity to energized high-voltage lines; to enter upon any land, building, or other premises and there	

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<p>lines have been deenergized and visibly grounded at point of work or where insulating barriers, not a part of or an attachment to the equipment or machinery, have been erected to prevent physical contact with the lines:</p>	<p>engage in any excavation, demolition, construction, repair, or other operation; or to erect, install, operate, or store in or upon such premises any tools, machinery, equipment, materials, or structures (including scaffolding, house moving, well drilling, pile driving, or hoisting equipment) unless and until danger from accidental contact with said high-voltage lines has been effectively guarded against. (b) Clearances or Safeguards Required. Except where overhead electrical distribution and transmission lines have been de-energized and visibly grounded, the following provisions shall be met: ***</p>	
<p>(i) For lines rated 50 kV or below, minimum clearance between the lines and any part of the crane or load shall be 10 feet; (ii) For lines rated over 50 kV, minimum clearance between the lines and any part of the crane or load shall be 10 feet plus 0.4 inch for each 1 kV over 50 kV, or twice the length of the line insulator, but never less than 10 feet; (iii) In transit with no load and boom lowered, the equipment clearance shall be a minimum of 4 feet for voltages less than 50 kV, and 10 feet for voltages over 50 kV, up to and including 345 kV, and 16 feet for voltages up to and including 750 kV;</p>	<p>(2) The operation, erection, handling, or transportation of tools, machinery, materials, structures, scaffolds, or the moving of any house or other building, or any other activity where any parts of the above or any part of an employee's body will come closer than the minimum clearances from energized overhead lines as set forth in Table 1 shall be prohibited. *** Operation of boom-type equipment shall conform to the minimum clearances set forth in Table 2, except in transit where the boom is lowered and there is no load attached, in which case the distances specified in Table 1 shall apply. TABLE 1 General Clearances Required from Energized Overhead High-Voltage Conductors</p> <p style="text-align: center;">Nominal voltage Minimum Required</p>	

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	<p align="center">(Phase to Phase) Clearance (Feet)</p> <p align="center">600..... 50,000 6</p> <p>over 50,000..... 345,000 10</p> <p>over 345,000.... 750,000 16</p> <p>over 750,000.... 1,000,000 20</p> <p>(3) Boom-type lifting or hoisting equipment. The erection, operation or dismantling of any boom-type lifting or hoisting equipment, or any part thereof, closer than the minimum clearances from energized overhead high-voltage lines set forth in Table 2 shall be prohibited. ***</p> <p>(d) Any overhead conductor shall be considered to be energized unless and until the person owning or operating such line verifies that the line is not energized, and the line is visibly grounded at the work site.</p> <p>TABLE 2 Boom-type lifting or hoisting equipment clearances required from energized overhead high-voltage lines.</p> <p align="center">Nominal voltage Minimum Required (Phase to Phase) Clearance (Feet)</p> <p align="center">600..... 50,000 10</p> <p>over 50,000..... 75,000 11</p> <p>over 75,000..... 125,000 13</p> <p>over 125,000.... 175,000 15</p> <p>over 175,000.... 250,000 17</p> <p>over 250,000.... 370,000 21</p> <p>over 370,000.... 550,000 27</p> <p>over 550,000.... 1,000,000 42</p>	
(iv) A person shall be designated to observe	(e) A person shall be designated to observe	

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<p>clearance of the equipment and give timely warning for all operations where it is difficult for the operator to maintain the desired clearance by visual means;</p>	<p><u>clearance of the equipment and give timely warning for all operations where site conditions or crane configurations make it difficult for the operator to maintain the desired clearance by visual means.</u></p>	
<p>(v) Cage-type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the requirements of any other regulation of this part even if such device is required by law or regulation;</p>	<p><u>(f) Cage-type boom guards, insulating links, or proximity warning devices may be used on cranes, but the use of such devices shall not alter the requirements of any other section of these Safety Orders even if such device is required by law or regulation.</u></p>	
<p>(vi) Any overhead wire shall be considered to be an energized line unless and until the person owning such line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded;</p>	<p>(d) Any overhead conductor shall be considered to be energized unless and until the person owning or operating such line verifies that the line is not energized, and the line is visibly grounded at the work site.</p>	
	<p><u>§5005. Work Near Transmitter Towers.</u></p>	
<p>(vii) Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if electrical charge is induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages:</p>	<p><u>Prior to work near transmitter towers where an electrical charge can be induced in the equipment or materials being handled, the transmitter shall be de-energized or tests shall be made to determine if an electrical charge is induced on the crane. The following precautions shall be taken when necessary to dissipate induced voltages:</u></p>	
<p>(A) The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and</p>	<p><u>(a) The equipment shall be provided with an electrical ground directly to the upper rotating structure supporting the boom; and</u></p>	
<p>(B) Ground jumper cables shall be attached to materials being handled by boom equipment when electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the load.</p>	<p><u>(b) Ground jumper cables shall be attached to materials being handled by boom equipment when an electrical charge is induced while working near energized transmitters. Crews shall be provided with nonconductive poles having large alligator clips or other similar protection to attach the ground cable to the</u></p>	

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	<u>load.</u>	
(C) Combustible and flammable materials shall be removed from the immediate area prior to operations.	<u>(c) Combustible and flammable materials shall be removed from the immediate area prior to operations.</u>	
Subpart R—Steel Erection		
■ 17. The authority citation for subpart R of 29 CFR part 1926 is revised to read as follows: ...		CA cites authority at each section.
■ 18. Section 1926.753 is amended by revising paragraphs (a) and (c)(4) to read as follows:		
<p>§ 1926.753 Hoisting and rigging. (a) All the provisions of subpart CC apply to hoisting and rigging with the exception of § 1926.1431(a). * * * * *</p> <p>(c) * * * (4) Cranes or derricks may be used to hoist employees on a personnel platform when work under this subpart is being conducted, provided that all provisions of § 1926.1431 (except for § 1926.1431(a)) are met. * * * * *</p>		CA construction standards for cranes and derricks are horizontal. No need to amend Steel Erection. See CA counterpart for §1926.1431 to follow.
Subpart S—Underground Construction, Caissons, Cofferdams, and Compressed Air		Federal changes proposed for Subpart S, promulgated August 21, 2012, are part of a separate CA rulemaking heard July 18, 2013, and adopted November 21, 2013.
■ 19. The authority citation for subpart S of 29 CFR part 1926 is revised to read as follows: ...		
■ 20. Section 1926.800 is amended by revising paragraph (t) to read as follows:		
<p>§ 1926.800 Underground construction. * * * * *</p> <p>(t) <i>Hoisting unique to underground construction.</i> Employers must comply with § 1926.1501(g) of § 1926 subpart DD. Except as</p>		Federal changes proposed for 1926.800, are part of a separate CA rulemaking heard July 18, 2013, and adopted November 21, 2013.

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<p>modified by this paragraph (t), the following provisions of subpart N of this part apply: Requirements for material hoists are found in §§ 1926.552(a) and (b) of this part. Requirements for personnel hoists are found in the personnel hoists requirements of §§ 1926.552(a) and (c) of this part and in the elevator requirement of §§ 1926.552(a) and (d) of this part. * * * * *</p>		
<p>Subpart T—Demolition</p>		
<p>■ 21. The authority citation for subpart T of 29 CFR part 1926 continues to read as follows: ...</p>		<p>Federal changes proposed for Subpart T, promulgated August 21, 2012, were heard July 18, 2013, and were adopted November 21, 2013.</p>
<p>■ 22. Section 1926.856 is amended by revising paragraph (c) to read as follows:</p>		
<p>§ 1926.856 Removal of walls, floors, and material with equipment. * * * * *</p> <p>(c) Mechanical equipment used shall meet the requirements specified in subparts N and O and § 1926.1501 of § 1926 subpart DD.</p>		
<p>■ 23. Section 1926.858 is amended by revising paragraph (b) to read as follows:</p>		
<p>§ 1926.858 Removal of walls, floors, and material with equipment. * * * * *</p> <p>(b) Cranes, derricks, and other hoisting equipment used shall meet the requirements specified in § 1926.1501 of § 1926 subpart DD.</p>		<p>Federal changes proposed for Subpart T, promulgated August 21, 2012, are part of a separate CA rulemaking heard July 18, 2013, and adopted November 21, 2013.</p>
<p>Subpart V—Power Transmission and Distribution</p>		
<p>■ 24. The authority citation for subpart V of part 1926 is revised to read as follows:</p>		<p>CA cites authority at each section.</p>
<p>■ 25. Section 1926.952 is amended by revising</p>		

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paragraph (c) to read as follows:		
<p>§ 1926.952 Mechanical equipment. * * * * *</p> <p>(c) Cranes and other lifting equipment.</p>	<p>§2940.7(c) Derrick Trucks, Cranes and Other Lifting Equipment.</p>	<p>CA counterpart is High-Voltage Electrical Safety Orders, Section 2940.7(c).</p>
<p>(1) All equipment shall comply with subparts CC and O of this part, as applicable.</p>		<p>All Title 8 standards apply where applicable.</p>
<p>(2) Digger derricks used for augering holes for poles carrying electric lines, placing and removing poles, or for handling associated materials to be installed or removed from the poles must comply with 29 CFR 1910.269.</p>		<p>CA counterpart for §1910.269 is Title 8, Chapter 4, Subchapter 5, Group 2, High-Voltage Electrical Safety Orders (HVESO), and more specifically Section 2940.7(c) for digger derricks. 29 CFR 1910.269 contains provisions for live line-bare hand work which have not been adopted by CA (CA does not allow live line-bare hand except by variance application).</p>
<p>(3) With the exception of equipment certified for work on the proper voltage, mechanical equipment shall not be operated closer to any energized line or equipment than the clearances set forth in § 1926.950(c) unless, in addition to the requirements in § 1926.1410:</p> <p>(i) The mechanical equipment is insulated, or</p> <p>(ii) The mechanical equipment is considered as energized.</p> <p>Note to paragraph (c)(3): In accordance with 29 CFR 1926.1400(g), compliance with 29 CFR 1910.269(p) will be deemed compliance with §§ 1926.1407 through 1926.1411, including § 1926.1410.</p>		<p>Covered by Section 2940.7(c)(2) Derrick Trucks, Cranes and Other Lifting Equipment, except that 29 CFR 1910.269 contains provisions for live line-bare hand work which have not been adopted by CA (CA does not allow live line-bare hand except by variance application).</p>
<p>Subpart X—Stairways and Ladders</p>		
<p>■ 26. The authority citation for subpart X of 29 CFR part 1926 is amended by revising paragraph (a) to read as follows:</p>		<p>CA cites authority at each section.</p>
<p>■ 27. Section 1926.1050 is amended by revising paragraph (a) to read as follows:</p>		

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<p>§ 1926.1050 Scope, application, and definitions applicable to this subpart. (a) Scope and application. This subpart applies to all stairways and ladders used in construction, alteration, repair (including painting and covered under 29 CFR part 1926, and also sets forth, in specified circumstances, when ladders and stairways are required to be provided. Additional requirements for ladders used on or with scaffolds are contained in subpart L—Scaffolds. This subpart does not apply to integral components of equipment covered by subpart CC. Subpart CC exclusively sets forth the circumstances when ladders and stairways must be provided on equipment covered by subpart CC. * * * * *</p>		<p>The subject of stairways and ladders is covered in CSO and GISO horizontal standards. CA does not exclude cranes and derricks from the provisions of CSO Section 1629, Stairways and Ladders and GISO Section 3234, Fixed Industrial Stairs as applicable.</p>
<p>Appendix A to Part 1926—Designations for General Industry Standards Incorporated into Body of Construction Standards</p>		
<p>■ 28. Appendix A to part 1926 is amended by removing the row containing “1926.550(a)(19)” and “1910.184(c)(9)” from the table “1926 DESIGNATIONS FOR APPLICABLE 1910 STANDARDS.”</p>		<p>Formatting changes not applicable to CA standards.</p>
<p>Subparts AA and BB—[Reserved]</p>		
<p>■ 29. Subparts AA and BB are reserved and subpart CC is added to read as follows:</p>		<p>Formatting changes not applicable to CA standards.</p>
<p>Subpart CC—Cranes and Derricks in Construction</p>	<p>Title 8, Chapter 4, Subchapter 7, General Industry Safety Orders, Group 13, Cranes and Other Hoisting Equipment</p>	<p>CA counterpart is Title 8, Chapter 4, Subchapter 7, General Industry Safety Orders, Group 13, Cranes and Other Hoisting Equipment.</p>
<p>Sec. 1926.1400 Scope. 1926.1401 Definitions.</p>		<p>Formatting difference between fed and CA. This federal section is an index – non-regulatory.</p>

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<p>1926.1402 Ground conditions. 1926.1403 Assembly/Disassembly—selection of manufacturer or employer procedures. 1926.1404 Assembly/Disassembly—general requirements (applies to all assembly and disassembly operations). 1926.1405 Disassembly—additional requirements for dismantling of booms and jibs (applies to both the use of manufacturer procedures and employer procedures). 1926.1406 Assembly/Disassembly—employer procedures—general requirements. 1926.1407 Power line safety (up to 350 kV)—assembly and disassembly. 1926.1408 Power line safety (up to 350 kV)—equipment operations. 1926.1409 Power line safety (over 350 kV). 1926.1410 Power line safety (all voltages)—equipment operations closer than the Table A zone. 1926.1411 Power line safety—while traveling. 1926.1412 Inspections. 1926.1413 Wire rope—inspection. 1926.1414 Wire rope—selection and installation criteria. 1926.1415 Safety devices. 1926.1416 Operational aids. 1926.1417 Operation. 1926.1418 Authority to stop operation. 1926.1419 Signals—general requirements. 1926.1420 Signals—radio, telephone or other electronic transmission of signals. 1926.1421 Signals—voice signals—additional requirements. 1926.1422 Signals—hand signal chart.</p>		
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<p>1926.1423 Fall protection. 1926.1424 Work area control. 1926.1425 Keeping clear of the load. 1926.1426 Free fall and controlled load lowering. 1926.1427 Operator qualification and certification. 1926.1428 Signal person qualifications. 1926.1429 Qualifications of maintenance & repair employees. 1926.1430 Training. 1926.1431 Hoisting personnel. 1926.1432 Multiple-crane/derrick lifts—supplemental requirements. 1926.1433 Design, construction and testing. 1926.1434 Equipment modifications. 1926.1435 Tower cranes. 1926.1436 Derricks. 1926.1437 Floating cranes/derricks and land cranes/derricks on barges. 1926.1438 Overhead & gantry cranes. 1926.1439 Dedicated pile drivers. 1926.1440 Sideboom cranes. 1926.1441 Equipment with a rated hoisting/lifting capacity of 2,000 pounds or less. 1926.1442 Severability. Appendix A to Subpart CC of part 1926—Standard Hand Signals Appendix B to Subpart CC of part 1926—Assembly/Disassembly—Sample Procedures for Minimizing the Risk of Unintended Dangerous Boom Movement Appendix C to Subpart CC of part 1926—Operator Certification—Written Examination—Technical Knowledge Criteria</p>		
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<p>Subpart CC—Cranes and Derricks in Construction</p>		
<p>§ 1926.1400 Scope.</p>	<p>§4880. Scope.</p>	
	<p><u>(a) The Orders in this Group shall apply to derricks, cranes, and boom-type excavators, but they shall not apply to aerial devices designed and used for positioning personnel (See Article 24).</u></p>	<p>1926 amended for placement in GISO. <i>[relocated from Section 4884(a)]</i></p>
<p>(a) This standard applies to power operated equipment, when used in construction, that can hoist, lower and horizontally move a suspended load. Such equipment includes, but is not limited to: Articulating cranes (such as knuckle-boom cranes); crawler cranes; floating cranes; cranes on barges; locomotive cranes; mobile cranes (such as wheel-mounted, rough-terrain, all terrain, commercial truck-mounted, and boom truck cranes); multi-purpose machines when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load; industrial cranes (such as carry deck cranes); dedicated pile drivers; service/mechanic trucks with a hoisting device; a crane on a monorail; tower cranes (such as a fixed jib, i.e., “hammerhead boom”), luffing boom and self-erecting); pedestal cranes; portal cranes; overhead and gantry cranes; straddle cranes; side boom cranes; derricks; and variations of such equipment. However, items listed in paragraph (c) of this section are excluded from the scope of this standard.</p>	<p><u>(1) This standard applies to power operated equipment that can hoist, lower and horizontally move a suspended load with or without attachments. Such equipment includes, but is not limited to: articulating boom cranes (such as knuckle-boom cranes); crawler cranes; floating cranes; cranes on barges; locomotive cranes; mobile cranes (such as wheel-mounted, rough-terrain, all terrain, commercial truck-mounted, and boom truck cranes); multi-purpose machines when configured to raise or lower by means of a hoist and horizontally move a suspended load; industrial cranes (such as carry deck cranes); cranes being used as dedicated pile drivers; service/mechanic trucks with a hoisting device; a crane on a monorail; tower cranes (such as a fixed jib, i.e., “hammerhead boom,” luffing boom and self-erecting); pedestal cranes; portal cranes; overhead/bridge and gantry cranes; straddle cranes; side boom cranes; derricks; and variations of such equipment. However, items listed in subsection (c) of this section are excluded from the scope of this standard.</u></p>	<p>Amended with 1/21/2015 subcommittee and Washington State WAC 296-155-52900 clarifications.</p>

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	<p><u>(2) Unless otherwise noted, the Orders in this Group apply to all cranes having a maximum rated capacity greater than one ton.</u></p>	<p>The State proposes to clarify that its crane standards apply to all cranes with a maximum rated capacity greater than one ton.</p>
<p>(b) Attachments. This standard applies to equipment included in paragraph (a) of this section when used with attachments. Such attachments, whether crane-attached or suspended include, but are not limited to: Hooks, magnets, grapples, clamshell buckets, orange peel buckets, concrete buckets, drag lines, personnel platforms, augers or drills and pile driving equipment.</p>	<p><u>(b) Attachments. This standard applies to equipment included in subsection (a) of this section when used with attachments. Such attachments, whether crane-attached or suspended include, but are not limited to: hooks, magnets, grapples, clamshell buckets, orange peel buckets, concrete buckets, drag lines, personnel platforms, augers or drills and pile driving equipment.</u></p>	
<p>(c) Exclusions. This subpart does not cover: (1) Machinery included in paragraph (a) of this section while it has been converted or adapted for a non-hoisting/lifting use. Such conversions/adaptations include, but are not limited to, power shovels, excavators and concrete pumps. (2) Power shovels, excavators, wheel loaders, backhoes, loader backhoes, track loaders. This machinery is also excluded when used with chains, slings or other rigging to lift suspended loads.</p>	<p><u>(c) Exclusions. Group 13 does not cover: (1) Machinery included in subsection (a) of this section while it has been converted or adapted for a non-hoisting/lifting use. Such conversions/adaptations include, but are not limited to, power shovels, excavators and concrete pumps. (2) Power shovels and excavators (except as prescribed by Article 94), wheel loaders, backhoes, loader backhoes, track loaders. This machinery is also excluded when used with chains, slings or other rigging to lift suspended loads.</u></p>	<p>Amended to clarify applicability to power shovels and excavators.</p>
<p>(3) Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles.</p>	<p><u>(3) Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles.</u></p>	
<p>(4) Digger derricks when used for augering holes for poles carrying electric and telecommunication lines, placing and removing the poles, and for handling associated materials to be installed on or removed from the poles. Digger derricks used in work subject to 29 CFR</p>	<p><u>(4) Digger derricks when used for augering holes for poles carrying electric and telecommunication lines, placing and removing the poles, and for handling associated materials to be installed on or removed from the poles. (A) Digger derricks used in work subject to the</u></p>	<p>The ESO and TCSO correspond to 1926 subpart Part V and with 1910.268 respectively.</p>

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<p>part 1926, subpart V, must comply with 29 CFR 1910.269. Digger derricks used in construction work for telecommunication service (as defined at 29 CFR 1910.268(s)(40)) must comply with 29 CFR 1910.268.</p>	<p><u>Electrical Safety Orders shall comply with Section 2940.7 of those Safety Orders.</u> <u>(B) Digger derricks used in construction work for telecommunication service (as defined in the Telecommunication Safety Orders) shall comply with those Safety Orders.</u></p>	
<p>(5) Machinery originally designed as vehicle-mounted aerial devices (for lifting personnel) and self-propelled elevating work platforms. (6) Telescopic/hydraulic gantry systems. (7) Stacker cranes.</p>	<p><u>(5) Machinery originally designed as vehicle-mounted aerial devices (for lifting personnel) and self-propelled elevating work platforms.</u> <u>(6) Telescopic/hydraulic gantry systems.</u> <u>(7) Stacker cranes.</u></p>	
<p>(8) Powered industrial trucks (forklifts), except when configured to hoist and lower (by means of a winch or hook) and horizontally move a suspended load.</p>	<p><u>(8) Powered industrial trucks (forklifts), except when configured to raise or lower by means of a hoist and horizontally move a suspended load.</u></p>	<p>Modifications based on OSHA CPL 02-01-057 and 1/21/15 subcommittee clarifications.</p>
<p>(9) Mechanic’s truck with a hoisting device when used in activities related to equipment maintenance and repair.</p>	<p><u>(9) Mechanic’s truck with a hoisting device when used in activities related to equipment maintenance and repair.</u></p>	
<p>(10) Machinery that hoists by using a come-a-long or chainfall.</p>	<p><u>(10) Multi-purpose machines or industrial trucks (forklifts) hoisting by use of a come-along or chainfall.</u></p>	<p>Clarified as amended by subcommittee 1/21/2015. “Machinery” is too broad for exclusion; it could exclude all come-alongs and chain falls from Group 13.</p>
<p>(11) Dedicated drilling rigs. (12) Gin poles when used for the erection of communication towers.</p>	<p><u>(11) Dedicated drilling rigs.</u> <u>(12) Gin poles when used for the erection of communication towers.</u></p>	
<p>(13) Tree trimming and tree removal work.</p>		<p>California is more protective; i.e., crane operators for tree trimming and removal are currently required to be certified. Use of cranes for tree trimming and removal is covered under GISO Article 12, Section 3427.</p>
<p>(14) Anchor handling or dredge related operations with a vessel or barge using an affixed A-frame.</p>	<p><u>(13) Anchor handling or dredge related operations with a vessel or barge using an affixed A-frame.</u></p>	
<p>(15) Roustabouts.</p>	<p><u>(14) Unpowered, rolling material lifts with hand-powered winches (roustabouts).</u></p>	<p>Definition for “roustabout” copied from Section 1610.1(c)(14).</p>

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(16) Helicopter cranes.	(15) Helicopter cranes.	
<p>(17) Material Delivery</p> <p>(i) Articulating/knuckle-boom truck cranes that deliver material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting.</p> <p>(ii) Articulating/knuckle-boom truck cranes that deliver material to a construction site when the crane is used to transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure, using a fork/cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device. Such sheet goods or packaged materials include, but are not limited to: Sheets of sheet rock, sheets of plywood, bags of cement, sheets or packages of roofing shingles, and rolls of roofing felt.</p> <p>(iii) This exclusion does not apply when:</p> <p>(A) The articulating/knuckle-boom crane is used to hold, support or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure;</p> <p>(B) The material being handled by the articulating/knuckle-boom crane is a prefabricated component. Such prefabricated components include, but are not limited to: Precast concrete members or panels, roof trusses (wooden, cold-formed metal, steel, or other material), prefabricated building sections such as, but not limited to: Floor panels, wall panels, roof panels, roof structures, or similar</p>		<p>California does not currently have similar exclusions for articulating/knuckle-boom cranes. However, an exception to certification requirements for knuckle-boom operators is included in Section 5006.2 exception No. 2.</p>

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<p>items; (C) The material being handled by the crane is a structural steel member (for example, steel joists, beams, columns, steel decking (bundled or unbundled) or a component of a systems-engineered metal building (as defined in 29 CFR 1926 subpart R). (D) The activity is not specifically excluded under § 1400(c)(17)(i) and (ii).</p>		
<p>(d) All sections of this subpart CC apply to the equipment covered by this standard unless specified otherwise.</p>	<p><u>§4880. Scope.</u> <u>(d) All sections of Group 13 apply to the equipment within the scope of this standard unless specified otherwise.</u></p>	
<p>(e) The duties of controlling entities under this subpart include, but are not limited to, the duties specified in § 1926.1402(c), § 1926.1402(e) and § 1926.1424(b).</p>		<p>This subsection is redundant and unnecessary in California.</p>
<p>(f) Where provisions of this standard direct an operator, crewmember, or other employee to take certain actions, the employer must establish, effectively communicate to the relevant persons, and enforce, work rules to ensure compliance with such provisions.</p>		<p>Employer responsibilities are covered by Section 3203.</p>
<p>(g) For work covered by subpart V of this part, compliance with 29 CFR § 1910.269(p) is deemed compliance with §§ 1926.1407 through 1926.1411.</p>	<p><u>(e) For work covered by the High-Voltage Electrical Safety Orders, compliance with those Orders is deemed compliance with Sections 5003.1 through 5003.4 and Section 5010.4.</u></p>	
<p>(h) Section 1926.1402 does not apply to cranes designed for use on railroad tracks, when used on railroad tracks that are part of the general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR part 213, and that comply with applicable Federal Railroad</p>	<p><u>(f) Section 4991.1 does not apply to cranes designed for use on railroad tracks, when used on railroad tracks that are part of the general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR part 213, and that comply with applicable Federal Railroad</u></p>	

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Administration requirements. See § 1926.1402(f).	<u>Administration requirements. See Exception to Section 4991.1.</u>	
§ 1926.1401 Definitions.	§4885. Definitions.	Unless otherwise noted, the following definitions are, or will be in GISO Section 4885.
A/D director (Assembly/Disassembly director) means an individual who meets this subpart’s requirements for an A/D director, irrespective of the person’s formal job title or whether the person is non-management or management personnel.	<u>A/D director (Assembly/Disassembly director). An individual who meets Group 13 requirements for an A/D director, irrespective of the person’s formal job title or whether the person is non-management or management personnel.</u>	Modified per AC1
Articulating crane means a crane whose boom consists of a series of folding, pin connected structural members, typically manipulated to extend or retract by power from hydraulic cylinders.	<u>Articulating Boom Crane. A crane whose boom consists of a series of folding, pin connected structural members, typically manipulated to extend or retract by power from hydraulic cylinders. articulated by hydraulic cylinders, powered by an internal combustion engine or electric motor.</u>	
Assembly/Disassembly means the assembly and/or disassembly of equipment covered under this standard. With regard to tower cranes, “erecting and climbing” replaces the term “assembly,” and “dismantling” replaces the term “disassembly.” Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.	<u>Assembly/Disassembly. The assembly and/or disassembly of equipment covered under this standard. With regard to tower cranes, “erecting and climbing” replaces the term “assembly,” and “dismantling” replaces the term “disassembly.” Regardless of whether the crane is initially erected to its full height or is climbed in stages, the process of increasing the height of the crane is an erection process.</u>	
Assist crane means a crane used to assist in assembling or disassembling a crane.	<u>Assist Crane. A crane used to assist in assembling or disassembling a crane.</u>	
Attachments means any device that expands the range of tasks that can be done by the equipment. Examples include, but are not limited to: An auger, drill, magnet, pile-driver, and boom-attached personnel platform.	<u>Attachment. Any device that expands the range of tasks that can be done by the equipment. Examples include, but are not limited to: an auger, drill, magnet, pile-driver, and boom-attached personnel platform.</u>	
Audible signal means a signal made by a	<u>Audible Signal. A signal made by a distinct</u>	

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<p>distinct sound or series of sounds. Examples include, but are not limited to, sounds made by a bell, horn, or whistle.</p>	<p><u>sound or series of sounds. Examples include, but are not limited to: sounds made by a bell, horn, or whistle.</u></p>	
<p>Blocking (also referred to as “cribbing”) is wood or other material used to support equipment or a component and distribute loads to the ground. It is typically used to support lattice boom sections during assembly/ disassembly and under outrigger and stabilizer floats.</p>	<p><u>Blocking (also referred to as “cribbing”). Wood or other material used to support equipment or a component and distribute loads to the ground. It is typically used to support lattice boom sections during assembly/ disassembly and under outrigger and stabilizer floats.</u></p>	
<p>Boatswain’s chair means a single point adjustable suspension scaffold consisting of a seat or sling (which may be incorporated into a full body harness) designed to support one employee in a sitting position.</p>	<p><u>Boatswain’s Chair. A single point adjustable suspension scaffold consisting of a seat or sling (which may be incorporated into a full body harness) designed to support one employee in a sitting position.</u></p>	
<p>Bogie means “travel bogie,” which is defined below.</p>	<p><u>Bogie. See “travel bogie.”</u></p>	
<p>Boom (equipment other than tower crane) means an inclined spar, strut, or other long structural member which supports the upper hoisting tackle on a crane or derrick. Typically, the length and vertical angle of the boom can be varied to achieve increased height or height and reach when lifting loads. Booms can usually be grouped into general categories of hydraulically extendible, cantilevered type, latticed section, cable supported type or articulating type.</p>	<p><u>Boom. A member section of a crane or derrick, the lower end of which is affixed to a mast, base, carriage, or support, and the upper end supports a hook or other end attachment. The length of the boom shall be taken as the straight line distance between the axis of the foot pin and the axis of the end sheave pin.</u></p>	
<p>Boom (tower cranes): On tower cranes, if the “boom” (i.e., principal horizontal structure) is fixed, it is referred to as a jib; if it is moveable up and down, it is referred to as a boom.</p>	<p><u>Boom (tower cranes). On tower cranes, if the “boom” (i.e., principal horizontal structure) is fixed, it is referred to as a jib; if it is moveable up and down, it is referred to as a boom.</u></p>	
<p>Boom angle indicator means a device which measures the angle of the boom relative to horizontal.</p>	<p><u>Boom Angle. The angle between the longitudinal centerline of the boom and the horizontal. The boom longitudinal centerline is a straight line between the boom foot pin (heel</u></p>	

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	pin) centerline and boom point sheave pin centerline.	
	Boom Hoist. A hoist drum and rope reeving system used to raise and lower the boom. The rope system may be all live reeving or a combination of live reeving and pendants.	
Boom hoist limiting device includes boom hoist disengaging device, boom hoist shut-off, boom hoist disconnect, boom hoist hydraulic relief, boom hoist kick-outs, automatic boom stop device, or derricking limiter. This type of device disengages boom hoist power when the boom reaches a predetermined operating angle. It also sets brakes or closes valves to prevent the boom from lowering after power is disengaged.	<u>Boom Hoist Limiting Device. Includes boom hoist disengaging device, boom hoist shut-off, boom hoist disconnect, boom hoist hydraulic relief, boom hoist kick-outs, automatic boom stop device, or derricking limiter. This type of device disengages boom hoist power when the boom reaches a predetermined operating angle. It may also set brakes or close valves to prevent the boom from lowering after power is disengaged.</u>	
Boom length indicator indicates the length of the permanent part of the boom (such as ruled markings on the boom) or, as in some computerized systems, the length of the boom with extensions/attachments.	<u>Boom Length Indicator. Indicates the length of the permanent part of the boom (such as ruled markings on the boom) or, as in some computerized systems, the length of the boom with extensions/attachments.</u>	
Boom stop includes boom stops, (belly straps with struts/standoff), telescoping boom stops, attachment boom stops, and backstops. These devices restrict the boom from moving above a certain maximum angle and toppling over backward.	<u>Boomstop. A structural component device used to limit the angle of the boom at the highest position. Includes but is not limited to structural components such as belly straps with struts/standoff, telescoping boom stops, attachment boom stops, and backstops. These devices restrict the boom from moving above a certain maximum angle and toppling over backward.</u>	
Boom suspension system means a system of pendants, running ropes, sheaves, and other hardware which supports the boom tip and controls the boom angle.	<u>Boom suspension system. A system of pendants, running ropes, sheaves, and other hardware which supports the boom tip and controls the boom angle.</u>	
Builder means the builder/constructor of	<u>Builder. The builder/constructor of equipment.</u>	

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equipment.		
Center of gravity: The center of gravity of any object is the point in the object around which its weight is evenly distributed. If you could put a support under that point, you could balance the object on the support.		Proposed verbiage is flawed. Furthermore the term is commonly understood in the industry, and is unnecessary to define.
Certified welder means a welder who meets nationally recognized certification requirements applicable to the task being performed.	<u>Certified Welder. A welder who meets recognized certification requirements applicable for the task being performed.</u>	
Climbing means the process in which a tower crane is raised to a new working height, either by adding additional tower sections to the top of the crane (top climbing), or by a system in which the entire crane is raised inside the structure (inside climbing).	<u>Climbing. The process in which a tower crane is raised to a new working height, either by adding additional tower sections to the top of the crane (top climbing), or by a system in which the entire crane is raised inside the structure (inside climbing).</u>	
Come-a-long means a mechanical device typically consisting of a chain or cable attached at each end that is used to facilitate movement of materials through leverage.	<u>Come-Along. A mechanical device typically consisting of a chain, strap or cable attached at each end that is used to facilitate movement of materials by using a mechanical advantage.</u>	
Competent person means one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.	§3207. Definitions. <u>Competent Person. One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.</u>	Add this definition to Section 3207 (verbiage copied from Section 1504 for consistency).
Controlled load lowering means lowering a load by means of a mechanical hoist drum device that allows a hoisted load to be lowered with maximum control using the gear train or hydraulic components of the hoist mechanism. Controlled load lowering requires the use of the hoist drive motor, rather than the load hoist brake, to lower the load.	§4885. <u>Controlled Load Lowering. Lowering a load by means of a mechanical hoist drum device that allows a hoisted load to be lowered with maximum control using the gear train or hydraulic components of the hoist mechanism. Controlled load lowering requires the use of the hoist drive motor, rather than the load hoist brake, to lower the load.</u>	
Controlling entity means an employer that is a	<u>Controlling Entity. An employer that is a prime</u>	The State proposes to take the federal definition

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<p>prime contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project—its planning, quality and completion.</p>	<p><u>contractor, general contractor, construction manager or any other legal entity which has the overall responsibility for the construction of the project - its planning, quality and completion.</u></p>	<p>for controlling entity verbatim.</p>
<p>Counterweight means a weight used to supplement the weight of equipment in providing stability for lifting loads by counterbalancing those loads.</p>	<p>§4885. Counterweight. A weight used to supplement the weight of the machine in providing stability for lifting working loads.</p>	
<p>Crane/derrick includes all equipment covered by this subpart.</p>		<p>Redundant: cranes and derricks are defined, and coverage is covered by the scope, Section 4880.</p>
<p>Crawler crane means equipment that has a type of base mounting which incorporates a continuous belt of sprocket driven track.</p>	<p>§4885. Crawler Crane. A crane consisting of a superstructure with power plant, operating machinery and boom, mounted on a base, equipped with crawler treads for travel.</p>	<p>Existing T8 definition for “Crawler Crane.”</p>
<p>Crossover points means locations on a wire rope which is spooled on a drum where one layer of rope climbs up on and crosses over the previous layer. This takes place at each flange of the drum as the rope is spooled onto the drum, reaches the flange, and begins to wrap back in the opposite direction.</p>	<p><u>Crossover Point. Location on a wire rope which is spooled on a drum where one layer of rope climbs up on and crosses over the previous layer. This takes place at each flange of the drum as the rope is spooled onto the drum, reaches the flange, and begins to wrap back in the opposite direction.</u></p>	
<p>Dedicated channel means a line of communication assigned by the employer who controls the communication system to only one signal person and crane/derrick or to a coordinated group of cranes/derricks/signal person(s).</p>	<p><u>Dedicated Channel. A line of communication assigned by the employer who controls the communication system to only one signal person and crane/derrick or to a coordinated group of cranes/derricks/signal person(s).</u></p>	
<p>Dedicated pile-driver is a machine that is designed to function exclusively as a pile-driver. These machines typically have the ability to both hoist the material that will be pile-driven and to pile-drive that material.</p>	<p><u>Dedicated Pile Driver. A machine that is designed to function exclusively as a pile driver. These machines typically have the ability to both hoist the material that will be pile-driven and to pile-drive that material.</u></p>	<p>Due to CA formatting, this term will be used in both the CSO and GISO, so the definition will be added to Sections 1504 and 4885.</p>
<p>Dedicated spotter (power lines): To be considered a dedicated spotter, the requirements</p>	<p><u>Dedicated Spotter (power lines). To be considered a dedicated spotter, the</u></p>	

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<p>of § 1926.1428 (Signal person qualifications) must be met and his/her sole responsibility is to watch the separation between the power line and the equipment, load line and load (including rigging and lifting accessories), and ensure through communication with the operator that the applicable minimum approach distance is not breached.</p>	<p><u>requirements of Section 5001.3 (Signal Person Qualifications) shall be met and his/her sole responsibility is to watch the separation between the power line and the equipment, and load line and load (including rigging and lifting accessories).</u></p>	
<p>Directly under the load means a part or all of an employee is directly beneath the load.</p>		<p>See “Fall Zone.”</p>
<p>Dismantling includes partial dismantling (such as dismantling to shorten a boom or substitute a different component).</p>		<p>Cannot define a word using the same word.</p>
<p>Drum rotation indicator means a device on a crane or hoist which indicates in which direction and at what relative speed a particular hoist drum is turning.</p>	<p><u>Drum Rotation Indicator. A device which indicates the relative speed a particular drum is turning.</u></p>	
<p>Electrical contact occurs when a person, object, or equipment makes contact or comes in close proximity with an energized conductor or equipment that allows the passage of current.</p>	<p><u>Electrical Contact. When a person, object, or equipment makes contact or comes in close proximity with an energized conductor or equipment that allows the passage of current.</u></p>	
<p>Employer-made equipment means floating cranes/derricks designed and built by an employer for the employer’s own use.</p>	<p><u>Employer-Made Equipment. Floating cranes/derricks designed and built by an employer for the employer’s own use.</u></p>	
<p>Encroachment is where any part of the crane, load line or load (including rigging and lifting accessories) breaches a minimum clearance distance that this subpart requires to be maintained from a power line.</p>	<p><u>Encroachment. Where any part of the crane, load line or load (including rigging and lifting accessories) breaches a minimum clearance distance that these Orders require to be maintained from a power line.</u></p>	
<p>Equipment means equipment covered by this subpart.</p>	<p><u>Equipment. For the purposes of this Group 13, the term “equipment” refers to equipment within the scope of Section 4880.</u></p>	<p>The State proposes its own comparable definition for the term equipment.</p>
<p>Equipment criteria means instructions, recommendations, limitations and specifications.</p>	<p><u>Equipment Criteria. Instructions, recommendations, limitations and specifications.</u></p>	

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<p>Fall protection equipment means guardrail systems, safety net systems, personal fall arrest systems, positioning device systems or fall restraint systems.</p>	<p>§3207. Personal Fall Protection System. A personal fall protection system includes personal fall arrest systems, positioning device systems, fall restraint systems, safety nets and guardrails.</p>	<p>Horizontal definition from Section 3207. Fall protection is more thoroughly described in CSO Article 24.</p>
<p>Fall restraint system means a fall protection system that prevents the user from falling any distance. The system is comprised of either a body belt or body harness, along with an anchorage, connectors and other necessary equipment. The other components typically include a lanyard, and may also include a lifeline and other devices.</p>	<p>§3207. Personal Fall Restraint System. A system used to prevent an employee from falling. It consists of an anchorage, connectors, and body belt/harness. It may include, lanyards, lifelines, and rope grabs designed for that purpose.</p>	<p>Horizontal definition from Section 3207.</p>
<p>Fall zone means the area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.</p>	<p>§4885. <u>Fall Zone. The area (including but not limited to the area directly beneath the load) in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.</u></p>	
<p>Flange points are points of contact between rope and drum flange where the rope changes layers.</p>	<p><u>Flange Points. Points of contact between rope and drum flange where the rope changes layers.</u></p>	
<p>Floating cranes/derricks means equipment designed by the manufacturer (or employer) for marine use by permanent attachment to a barge, pontoons, vessel or other means of flotation.</p>	<p><u>Floating Cranes/Derricks. Equipment designed by the manufacturer (or employer) for marine use by permanent attachment to a barge, pontoons, vessel or other means of flotation.</u></p>	
<p>For example means “one example, although there are others.”</p>		<p>Unnecessary due to CA formatting and usage.</p>
<p>Free fall (of the load line) means that only the brake is used to regulate the descent of the load line (the drive mechanism is not used to drive the load down faster or retard its lowering).</p>	<p><u>Free Fall (of the load line). Only the brake is used to regulate the descent of the load line (the drive mechanism is not used to drive the load down faster or retard its lowering).</u></p>	
<p>Free surface effect is the uncontrolled transverse movement of liquids in compartments which reduce a vessel’s transverse stability.</p>	<p><u>Free Surface Effect. The uncontrolled movement of liquids in compartments which reduce a vessel’s stability.</u></p>	<p>More inclusive and protective.</p>

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<p>Hoist means a mechanical device for lifting and lowering loads by winding a line onto or off a drum.</p>	<p>Hoist. An apparatus for raising or lowering a load by the application of a pulling force, but does not include a car or platform riding in guides. Some common types of hoists are defined as follows:</p>	
<p>Hoisting is the act of raising, lowering or otherwise moving a load in the air with equipment covered by this standard. As used in this standard, “hoisting” can be done by means other than wire rope/hoist drum equipment.</p>	<p><u>Hoisting. The act of raising, or lowering a load with equipment covered by this standard. As used in this standard, “hoisting” can be done by means other than wire rope/hoist drum equipment.</u></p>	
<p>Include/including means “including, but not limited to.”</p>	<p><u>Include/Including. “Including, but not limited to.”</u></p>	
<p>Insulating link/device means an insulating device listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.</p>	<p><u>Insulating Link/Device. An insulating device listed, labeled, or accepted by a nationally recognized testing laboratory in accordance with 29 CFR 1910.7.</u></p>	
<p>Jib stop (also referred to as a jib backstop), is the same type of device as a boom stop but is for a fixed or luffing jib.</p>	<p><u>Jib Stop (also referred to as a jib backstop). The same type of device as a boom stop but is for a fixed or luffing jib.</u></p>	
<p>Land crane/derrick is equipment not originally designed by the manufacturer for marine use by permanent attachment to barges, pontoons, vessels, or other means of floatation.</p>	<p><u>Land Crane/Derrick. Equipment not originally designed by the manufacturer for marine use by permanent attachment to barges, pontoons, vessels, or other means of floatation.</u></p>	
<p>List means the angle of inclination about the longitudinal axis of a barge, pontoons, vessel or other means of floatation.</p>	<p><u>List. The angle of inclination about the longitudinal axis of a barge, pontoons, vessel or other means of floatation.</u></p>	
<p>Load refers to the object(s) being hoisted and/or the weight of the object(s); both uses refer to the object(s) and the load-attaching equipment, such as, the load block, ropes, slings, shackles, and any other ancillary attachment.</p>	<p><u>Load. (Working). The external load in pounds applied on the hoisting line, including the weight of load attaching equipment such as load blocks, shackles, slings, buckets, and magnets. The object(s) being hoisted and/or the weight of the object(s). Both uses refer to the object(s) and the load-attaching equipment, such as ropes, slings, shackles, and any other ancillary attachment as defined by the</u></p>	<p>AC1 recommended mods.</p>

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	<u>crane/derrick manufacturer.</u>	
Load moment (or rated capacity) indicator means a system which aids the equipment operator by sensing (directly or indirectly) the overturning moment on the equipment, i.e., load multiplied by radius. It compares this lifting condition to the equipment's rated capacity, and indicates to the operator the percentage of capacity at which the equipment is working. Lights, bells, or buzzers may be incorporated as a warning of an approaching overload condition.	<u>Load Moment (or rated capacity) Indicator. A device that automatically monitors radius, load weight, and load rating and warns the crane operator of an overload condition.</u>	AC1 recommended mods.
Load moment (or rated capacity) limiter means a system which aids the equipment operator by sensing (directly or indirectly) the overturning moment on the equipment, i.e., load multiplied by radius. It compares this lifting condition to the equipment's rated capacity, and when the rated capacity is reached, it shuts off power to those equipment functions which can increase the severity of loading on the equipment, e.g., hoisting, telescoping out, or luffing out. Typically, those functions which decrease the severity of loading on the equipment remain operational, e.g., lowering, telescoping in, or luffing in.	<u>Load Moment (or rated capacity) Limiter. A device that automatically monitors radius, load weight, and load rating and prevents movements of the crane which would result in an overload condition.</u>	AC1 recommended mods.
Locomotive crane means a crane mounted on a base or car equipped for travel on a railroad track.	<u>Locomotive Crane. A crane mounted on a base or car equipped for travel on a railroad track.</u>	
Luffing jib limiting device is similar to a boom hoist limiting device, except that it limits the movement of the luffing jib.	<u>Luffing Jib Limiting Device. Includes jib hoist disengaging device, jib hoist shut-off, jib hoist disconnect, jib hoist hydraulic relief, jib hoist kick-outs, or automatic jib stop device. This type of device disengages jib hoist power when the jib reaches predetermined operating angles.</u>	AC1 recommended mods.

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	<p><u>It may also set-brakes or close valves to prevent the jib from lowering after power is disengaged.</u></p>	
<p>Marine hoisted personnel transfer device means a device, such as a “transfer net,” that is designed to protect the employees being hoisted during a marine transfer and to facilitate rapid entry into and exit from the device. Such devices do not include boatswain’s chairs when hoisted by equipment covered by this standard.</p>		<p>Not used. Vessel-to-vessel transfer is outside CA jurisdiction.</p>
<p>Marine worksite means a construction worksite located in, on or above the water.</p>	<p><u>Marine Worksite. A construction worksite located in, on, under or above the water.</u></p>	
<p>Mobile crane means a lifting device incorporating a cable suspended latticed boom or hydraulic telescopic boom designed to be moved between operating locations by transport over the road.</p>		<p>CA relies on B30 standards to define.</p>
<p>Moving point-to-point means the times during which an employee is in the process of going to or from a work station.</p>		<p>“Moving point-to-point” requires no definition; furthermore, this definition is too narrow and restrictive.</p>
<p>Multi-purpose machine means a machine that is designed to be configured in various ways, at least one of which allows it to hoist (by means of a winch or hook) and horizontally move a suspended load. For example, a machine that can rotate and can be configured with removable forks/tongs (for use as a forklift) or with a winch pack, jib (with a hook at the end) or jib used in conjunction with a winch. When configured with the forks/tongs, it is not covered by this subpart. When configured with a winch pack, jib (with a hook at the end) or jib used in conjunction with a winch, it is covered by this subpart.</p>	<p><u>Multi-Purpose Machine. A machine, other than a crane or derrick, that is designed to be configured and used in various ways, at least one of which allows it to raise or lower by means of a hoist and horizontally move a suspended load.</u></p>	<p>Clarified as modified by 1/21/15 subcommittee. Examples were eliminated as they can be interpreted to limit application and to find loopholes in the standard.</p>

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<p>Nationally recognized accrediting agency is an organization that, due to its independence and expertise, is widely recognized as competent to accredit testing organizations. Examples of such accrediting agencies include, but are not limited to, the National Commission for Certifying Agencies and the American National Standards Institute.</p>	<p><u>Nationally Recognized Accrediting Agency. An organization that, due to its independence and expertise, is widely recognized as competent to accredit testing organizations. Examples of such accrediting agencies include, but are not limited to, Institute for Credentialing Excellence (the National Commission for Certifying Agencies) and the American National Standards Institute.</u></p>	<p>California proposes to adopt the Federal definition of nationally recognized accrediting agency, essentially verbatim.</p>
<p>Nonconductive means that, because of the nature and condition of the materials used, and the conditions of use (including environmental conditions and condition of the material), the object in question has the property of not becoming energized (that is, it has high dielectric properties offering a high resistance to the passage of current under the conditions of use).</p>	<p><u>Nonconductive. Because of the nature and condition of the materials used, and the conditions of use (including environmental conditions and condition of the material), the object in question offers a high resistance to the passage of current under the conditions of use).</u></p>	<p>AC1 recommended mods.</p>
<p>Operational aids are devices that assist the operator in the safe operation of the crane by providing information or automatically taking control of a crane function. These include, but are not limited to, the devices listed in § 1926.1416 (“listed operational aids”).</p>	<p><u>Operational Aid. An accessory that provides information to facilitate operation of a crane or that takes control of particular functions without action of the operator when a limiting condition is sensed. These include, but are not limited to, the devices listed in Section 5018.</u></p>	<p>ASME B30.5 definition (modified).</p>
<p>Operational controls means levers, switches, pedals and other devices for controlling equipment operation.</p>	<p><u>Operational Controls. Levers, switches, pedals and other devices for controlling equipment operation.</u></p>	
<p>Operator means a person who is operating the equipment.</p>	<p><u>Operator. A person who is operating the equipment.</u></p>	
<p>Overhead and gantry cranes includes overhead/bridge cranes, semigantry, cantilever gantry, wall cranes, storage bridge cranes, launching gantry cranes, and similar equipment, irrespective of whether it travels on tracks, wheels, or other means.</p>	<p><u>Overhead and Gantry Cranes. Includes overhead/bridge cranes, semi-gantry, cantilever gantry, wall cranes, and storage bridge cranes.</u></p>	<p>AC1 recommended mod.</p>

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<p>Paragraph refers to a paragraph in the same section of this subpart that the word “paragraph” is used, unless otherwise specified.</p>		<p>Not applicable for CA formatting.</p>
<p>Pendants includes both wire and bar types. Wire type: A fixed length of wire rope with mechanical fittings at both ends for pinning segments of wire rope together. Bar type: Instead of wire rope, a bar is used. Pendants are typically used in a latticed boom crane system to easily change the length of the boom suspension system without completely changing the rope on the drum when the boom length is increased or decreased.</p>	<p><u>Pendant. A rope or strand of specified length with fixed end connections.</u></p>	<p>AC1 recommended mod.</p>
<p>Personal fall arrest system means a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, a body harness and may include a lanyard, deceleration device, lifeline, or suitable combination of these.</p>	<p>§3207. Definitions. Personal Fall Arrest System. A system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of the aforementioned components/devices.</p>	
<p>Portal crane is a type of crane consisting of a rotating upperstructure, hoist machinery, and boom mounted on top of a structural gantry which may be fixed in one location or have travel capability. The gantry legs or columns usually have portal openings in between to allow passage of traffic beneath the gantry.</p>	<p>§4885. Definitions. *** Crane. *** (O) Crane, Portal Crane (Whirley Type). A gantry crane without trolley motion, which has a boom attached to a revolving crane mounted on a gantry, with the boom capable of being raised or lowered at its head (outer end). Portal cranes may be fixed or mobile.</p>	
<p>Power lines means electric transmission and</p>	<p><u>Power Lines. Electric transmission and</u></p>	

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distribution lines.	<u>distribution lines.</u>	
Procedures include, but are not limited to: Instructions, diagrams, recommendations, warnings, specifications, protocols and limitations.	<u>Procedures. Includes, but is not limited to: instructions, diagrams, recommendations, warnings, specifications, protocols and limitations.</u>	
Proximity alarm is a device that provides a warning of proximity to a power line and that has been listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7.	<u>Proximity Alarm. A device that provides a warning of proximity to a power line and that has been listed, labeled, or accepted by a Nationally Recognized Testing Laboratory in accordance with 29 CFR 1910.7, or approved in accordance with Section 3206.</u>	Amended for CA differences. CA will retain reference to 29 CFR 1910.7.
Qualified evaluator (not a third party) means a person employed by the signal person's employer who has demonstrated that he/she is competent in accurately assessing whether individuals meet the Qualification Requirements in this subpart for a signal person.	<u>Qualified Evaluator (not a third party). A person employed by the signal person's employer who has demonstrated that they are competent in accurately assessing whether individuals meet the qualification requirements in these Orders for a signal person.</u>	
Qualified evaluator (third party) means an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the Qualification Requirements in this subpart for a signal person.	<u>Qualified evaluator (third party). An entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the qualification requirements in these Orders for a signal person.</u>	
Qualified person means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrated the ability to solve/ resolve problems relating to the subject matter, the work, or the project.	§3207. Definitions. Qualified Person, Attendant or Operator. A person designated by the employer who by reason of his training and experience has demonstrated his ability to safely perform his duties and, where required, is properly licensed in accordance with federal, state, or local laws and regulations.	Use Section 3207 definition for consistency throughout the Safety Orders.
Qualified rigger is a rigger who meets the criteria for a qualified person.	§4885. Definitions. *** <u>Qualified Rigger. A rigger who meets the criteria for a qualified person.</u>	

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<p>Range control limit device is 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.</p>	<p><u>Range Limit Device. A device that can be set to limit movement of the boom or jib tip to a plane or multiple planes.</u></p>	<p>AC1 recommended mod.</p>
<p>Range control warning device is a device that can be set by an equipment operator to warn that the boom or jib tip is at a plane or multiple planes.</p>	<p><u>Range Control Warning Device. A device that can be set to warn that the boom or jib tip is at a plane or multiple planes.</u></p>	<p>AC1 recommended mod.</p>
<p>Rated capacity means the maximum working load permitted by the manufacturer under specified working conditions. Such working conditions typically include a specific combination of factors such as equipment configuration, radii, boom length, and other parameters of use.</p>	<p><u>Rated Capacity. The maximum working load permitted by the manufacturer under specified working conditions. Such working conditions typically include a specific combination of factors such as equipment configuration, radii, boom length, and other parameters of use.</u></p>	
<p>Rated capacity indicator: See load moment indicator.</p>	<p><u>Rated Capacity Indicator: See load moment indicator.</u></p>	
<p>Rated capacity limiter: See load moment limiter.</p>	<p><u>Rated Capacity Limiter: See load moment limiter.</u></p>	
<p>Repetitive pickup points refer to, when operating on a short cycle operation, the rope being used on a single layer and being spooled repetitively over a short portion of the drum.</p>	<p><u>Repetitive Pickup Points. When operating on a short cycle operation, the rope being used on a single layer and being spooled repetitively over a short portion of the drum.</u></p>	
	<p><u>Registered Professional Engineer (RPE). A person who is registered as a professional civil, mechanical, or structural engineer by the State of California and is knowledgeable in the structure and use of the equipment.</u></p>	<p>There is no federal counterpart definition for this term. This was a recommendation resulting from the advisory committee process.</p>
<p>Running wire rope means a wire rope that moves over sheaves or drums.</p>	<p><u>Running Wire Rope. A wire rope that travels over sheaves or drums.</u></p>	
<p>Runway means a firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as</p>	<p><u>Runway. A firm, level surface designed, prepared and designated as a path of travel for the weight and configuration of the crane being used to lift and travel with the crane suspended platform. An existing surface may be used as</u></p>	

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long as it meets these criteria.	<u>long as it meets these criteria.</u>	
Section means a section of this subpart, unless otherwise specified.		N/A due to CA formatting differences.
Sideboom crane means a track-type or wheel-type tractor having a boom mounted on the side of the tractor, used for lifting, lowering or transporting a load suspended on the load hook. The boom or hook can be lifted or lowered in a vertical direction only.	<u>Sideboom Crane. A track-type or wheel-type tractor having a boom mounted on the side of the tractor, used for lifting, lowering or transporting a load suspended on the load hook. The boom or hook can be lifted or lowered in a vertical direction only.</u>	
Special hazard warnings means warnings of site-specific hazards (for example, proximity of power lines).	<u>Special Hazard Warnings. Warnings of site-specific hazards (for example, proximity of power lines).</u>	
Stability (flotation device) means the tendency of a barge, pontoons, vessel or other means of flotation to return to an upright position after having been inclined by an external force.	<u>Stability (flotation device). The tendency of a barge, pontoons, vessel or other means of flotation to return to an upright position after having been inclined by an external force.</u>	
Standard Method means the protocol in Appendix A of this subpart for hand signals.	<u>Standard Method. The protocol illustrated in Section 5001, Plate I, for hand signals.</u>	
Such as means “such as, but not limited to.”	<u>Such as. “Such as, but not limited to.”</u>	
Superstructure: See Upperworks.	<u>Superstructure. See “Upperworks.”</u>	
Tagline means a rope (usually fiber) attached to a lifted load for purposes of controlling load spinning and pendular motions or used to stabilize a bucket or magnet during material handling operations.	<u>Tag line. A rope (usually fiber) attached to a lifted load for purposes of controlling load spinning and pendular motions or used to stabilize a bucket or magnet during material handling operations.</u>	
Tender means an individual responsible for monitoring and communicating with a diver.	<u>Tender. An individual responsible for monitoring and communicating with a diver.</u>	
Tilt up or tilt down operation means raising/lowering a load from the horizontal to vertical or vertical to horizontal.	<u>Tilt Up or Tilt Down Operation. Raising/lowering a load from the horizontal to vertical or vertical to horizontal.</u>	
Tower crane is a type of lifting structure which utilizes a vertical mast or tower to support a working boom (jib) in an elevated position. Loads are suspended from the working boom. While the working boom may be of the fixed	(V) Tower Crane. A crane in which a boom, swinging jib or other structural member is mounted on a vertical mast or tower. (1) Tower Crane (Climber). A crane erected upon and supported by a building or other	CA Section 4885, definition of “Tower Crane” also includes illustrations (Figs. 15-17), thus we believe it is equally effective.

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<p>type (horizontal or angled) or have luffing capability, it can always rotate to swing loads, either by rotating on the top of the tower (top slewing) or by the rotation of the tower (bottom slewing). The tower base may be fixed in one location or ballasted and moveable between locations. Mobile cranes that are configured with luffing jib and/or tower attachments are not considered tower cranes under this section.</p>	<p>structure which may be raised or lowered to different floors or levels of the building or structure.</p> <p>(2) Tower Crane (Free Standing). A crane with a horizontally swinging, usually non-luffing boom which may be on a fixed base or mounted on rails.</p> <p>(3) Tower Crane (Mobile). A tower crane which is mounted on a crawler, truck or similar carrier for travel or transit.</p> <p>(4) Tower Crane (Self-Erector). A mobile tower crane that is truck carrier mounted and capable of self-erection.</p>	
<p>Travel bogie (tower cranes) is an assembly of two or more axles arranged to permit vertical wheel displacement and equalize the loading on the wheels.</p>	<p><u>Travel Bogie (tower cranes). An assembly of two or more axles arranged to permit vertical wheel displacement and equalize the loading on the wheels.</u></p>	
<p>Trim means angle of inclination about the transverse axis of a barge, pontoons, vessel or other means of floatation.</p>	<p><u>Trim. The angle of inclination about the transverse axis of a barge, pontoons, vessel or other means of floatation.</u></p>	
<p>29 CFR 1910.179(a)(63): “The ‘trolley’ is the unit which travels on the bridge rails and carries the hoisting mechanism.”</p>	<p><u>Trolley:</u> <u>(1) For overhead and gantry cranes: A truck or carriage supporting the load mounted on an overhead beam, bridge, cableway or track.</u> <u>(2) For tower cranes: The component of the crane that moves along the jib of a hammerhead tower crane and positions the load radially.</u></p>	<p>This existing state definition is currently part of the definition for “Travel” in CCR Title 8, Section 4885. It is proposed to be relocated and amended for clarity since the definition will now cover both construction and general industry. Existing state verbiage has been previously approved as equivalent with 29 CFR 1910.179(a)(63). A definition for Tower Cranes, taken from ASME B30.3, has also been added for clarity.</p>
<p>Two blocking means a condition in which a component that is uppermost on the hoist line such as the load block, hook block, overhaul ball, or similar component, comes in contact with the boom tip, fixed upper block or similar</p>	<p>Two-Blocking. A condition in which the lower load block or hook assembly comes into contact with the upper load block or boom point sheave assembly.</p>	

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<p>component. This binds the system and continued application of power can cause failure of the hoist rope or other component.</p>		
<p>Unavailable procedures means procedures that are no longer available from the manufacturer, or have never been available, from the manufacturer.</p>	<p><u>Unavailable Procedures. Procedures that are no longer available from the manufacturer, or have never been available, from the manufacturer.</u></p>	
<p>Upperstructure: See Upperworks.</p>	<p><u>Upperstructure. See Upperworks.</u></p>	
<p>Upperworks means the revolving frame of equipment on which the operating machinery (and many cases the engine) are mounted along with the operator’s cab. The counterweight is typically supported on the rear of the upperstructure and the boom or other front end attachment is mounted on the front.</p>	<p><u>Upperworks. The revolving frame of equipment on which the operating machinery (and many cases the engine) are mounted along with the operator’s cab.</u></p>	<p>Last sentence of the federal definition is not entirely accurate and is unnecessary.</p>
<p>Up to means “up to and including.”</p>		<p>CA formatting uses “up to and including.”</p>
<p>Wire rope means a flexible rope constructed by laying steel wires into various patterns of multi-wired strands around a core system to produce a helically wound rope.</p>	<p><u>Wire Rope. A flexible rope constructed by laying steel wires into various patterns of multi-wired strands around a core system to produce a helically wound rope.</u></p>	
<p>§ 1926.1402 Ground conditions.</p>	<p>§4991.1. Ground Conditions.</p>	
<p>(a) Definitions. (1) “Ground conditions” means the ability of the ground to support the equipment (including slope, compaction, and firmness). (2) “Supporting materials” means blocking, mats, cribbing, marsh buggies (in marshes/wetlands), or similar supporting materials or devices.</p>	<p><u>(a) Definitions.</u> <u>(1) Ground conditions. The ability of the ground to support the equipment (including slope, compaction, and firmness).</u> <u>(2) Supporting materials. Blocking, mats, cribbing, marsh buggies (in marshes/wetlands), or similar supporting materials or devices.</u></p>	
<p>(b) The equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer’s specifications for adequate</p>	<p><u>(b) The equipment shall not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer’s specifications for adequate</u></p>	

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<p>support and degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands.</p>	<p><u>support and degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands.</u></p>	
<p>(c) The controlling entity must: (1) Ensure that ground preparations necessary to meet the requirements in paragraph (b) of this section are provided. (2) Inform the user of the equipment and the operator of the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards are otherwise known to that controlling entity.</p>	<p><u>(c) The controlling entity shall: (1) Ensure that ground preparations necessary to meet the requirements in subsection (b) are provided. (2) Inform the user of the equipment and the operator regarding the location of hazards beneath the equipment set-up area (such as voids, tanks, utilities) if those hazards are identified in documents (such as site drawings, as-built drawings, and soil analyses) that are in the possession of the controlling entity (whether at the site or off-site) or the hazards are otherwise known to that controlling entity.</u></p>	
<p>(d) If there is no controlling entity for the project, the requirement in paragraph (c)(1) of this section must be met by the employer that has authority at the site to make or arrange for ground preparations needed to meet paragraph (b) of this section.</p>	<p><u>(d) If there is no controlling entity for the project, the requirement in subsection (c)(1) shall be met by the employer that has authority at the site to make or arrange for ground preparations needed to meet subsection (b).</u></p>	
<p>(e) If the A/D director or the operator determines that ground conditions do not meet the requirements in paragraph (b) of this section, that person's employer must have a discussion with the controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials/devices (if necessary), the requirements in paragraph (b) of this section can be met.</p>	<p><u>(e) If the A/D director or the operator determines that ground conditions do not meet the requirements in subsection (b), that person's employer shall have a discussion with the controlling entity regarding the ground preparations that are needed so that, with the use of suitable supporting materials/devices (if necessary), the requirements in subsection (b) can be met.</u></p>	
<p>(f) This section does not apply to cranes designed for use on railroad tracks when used on railroad tracks that are part of the general railroad system of transportation that is</p>	<p><u>EXCEPTION: This section does not apply to cranes designed for use on railroad tracks when used on railroad tracks that are part of the general railroad system of transportation that is</u></p>	

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<p>regulated pursuant to the Federal Railroad Administration under 49 CFR part 213 and that comply with applicable Federal Railroad Administration requirements.</p>	<p><u>regulated pursuant to the Federal Railroad Administration under 49 CFR part 213 and that comply with applicable Federal Railroad Administration requirements.</u></p>	
<p>§ 1926.1403 Assembly/Disassembly—selection of manufacturer or employer procedures.</p>	<p><u>§5010. Assembly/Disassembly – Selection of Manufacturer or Employer Procedures.</u></p>	
<p>When assembling or disassembling equipment (or attachments), the employer must comply with all applicable manufacturer prohibitions and must comply with either: (a) Manufacturer procedures applicable to assembly and disassembly, or (b) Employer procedures for assembly and disassembly. Employer procedures may be used only where the employer can demonstrate that the procedures used meet the requirements in §1926.1406. Note: The employer must follow manufacturer procedures when an employer uses synthetic slings during assembly or disassembly rigging. (See § 1926.1404(r).)</p>	<p><u>(a) When assembling or disassembling equipment (or attachments), the employer shall comply with all applicable manufacturer prohibitions and shall comply with either: (1) Manufacturer procedures applicable to assembly and disassembly, or (2) Written employer procedures for assembly and disassembly. Employer procedures may be used only where the employer can demonstrate that the procedures used comply with all provisions of these Safety Orders, including the requirements in Section 5010.3.</u></p>	<p>The Note is not proposed for inclusion as it appears to imply that manufacturer’s procedures need not be followed when slings other than synthetic are used.</p>
<p>§ 1926.1404 Assembly/Disassembly—general requirements (applies to all assembly and disassembly operations).</p>	<p><u>§5010.1. Assembly/Disassembly – General Requirements (Applies to All Assembly and Disassembly Operations).</u></p>	
<p>(a) Supervision—competent-qualified person. (1) Assembly/disassembly must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons (“A/D director”). (2) Where the assembly/disassembly is being performed by only one person, that person must meet the criteria for both a competent person and a qualified person. For purposes of this</p>	<p><u>(a) Supervision—competent-qualified person. (1) Assembly/disassembly shall be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons (“A/D director”). (2) Where the assembly/disassembly is being performed by only one person, that person shall meet the criteria for both a competent person and a qualified person. For purposes of</u></p>	

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<p>standard, that person is considered the A/D director.</p>	<p><u>this standard, that person is considered the A/D director.</u></p>	
<p>(b) Knowledge of procedures. The A/D director must understand the applicable assembly/disassembly procedures.</p>	<p><u>(b) Knowledge of procedures. The A/D director shall understand the applicable assembly/disassembly procedures.</u></p>	
<p>(c) Review of procedures. The A/D director must review the applicable assembly/disassembly procedures immediately prior to the commencement of assembly/disassembly unless the A/D director understands the procedures and has applied them to the same type and configuration of equipment (including accessories, if any).</p>	<p><u>(c) Review of procedures. The A/D director shall review the applicable assembly/disassembly procedures immediately prior to the commencement of assembly/disassembly unless the A/D director understands the procedures and has applied them to the same type and configuration of equipment (including accessories, if any).</u></p>	
<p>(d) Crew instructions. (1) Before commencing assembly/disassembly operations, the A/D director must ensure that the crew members understand all of the following: (i) Their tasks. (ii) The hazards associated with their tasks. (iii) The hazardous positions/locations that they need to avoid. (2) During assembly/disassembly operations, before a crew member takes on a different task, or when adding new personnel during the operations, the requirements in paragraphs (d)(1)(i) through (d)(1)(iii) of this section must be met.</p>	<p><u>(d) Crew instructions.</u> <u>(1) Before commencing assembly/disassembly operations, the A/D director shall ensure that the crew members understand all of the following:</u> <u>(A) Their tasks.</u> <u>(B) The hazards associated with their tasks.</u> <u>(C) The hazardous positions/locations that they need to avoid.</u> <u>(2) During assembly/disassembly operations, before a crew member takes on a different task, or when adding new personnel during the operations, the requirements in subsections (d)(1)(A) through (d)(1)(C) of this section shall be met.</u></p>	
<p>(e) Protecting assembly/disassembly crew members out of operator view. (1) Before a crew member goes to a location that is out of view of the operator and is either in, on, or under the equipment, or near the equipment (or load) where the crew member could be injured by movement of the equipment</p>	<p><u>(e) Protecting assembly/disassembly crew members out of operator view.</u> <u>(1) Before a crew member goes to a location that is out of view of the operator and is either in, on, or under the equipment, or near the equipment (or load) where the crew member could be injured by movement of the</u></p>	

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<p>(or load), the crew member must inform the operator that he/she is going to that location. (2) Where the operator knows that a crew member went to a location covered by paragraph (e)(1) of this section, the operator must not move any part of the equipment (or load) until the operator is informed in accordance with a prearranged system of communication that the crew member is in a safe position.</p>	<p><u>equipment (or load), the crew member shall inform the operator that they are going to that location.</u> <u>(2) Where the operator knows that a crew member went to a location covered by subsection (e)(1), the operator shall not move any part of the equipment (or load) until the operator is informed in accordance with a prearranged system of communication that the crew member is in a safe position.</u></p>	
<p>(f) Working under the boom, jib or other components. (1) When pins (or similar devices) are being removed, employees must not be under the boom, jib, or other components, except where the requirements of paragraph (f)(2) of this section are met. (2) Exception. Where the employer demonstrates that site constraints require one or more employees to be under the boom, jib, or other components when pins (or similar devices) are being removed, the A/D director must implement procedures that minimize the risk of unintended dangerous movement and minimize the duration and extent of exposure under the boom. (See Non-mandatory Appendix B of this subpart for an example.)</p>	<p><u>(f) Working under the boom, jib or other components.</u> <u>(1) When pins (or similar devices) are being removed, employees shall not be under the boom, jib, or other components.</u></p>	<p>Federal exception is less protective than CA.</p>
<p>(g) Capacity limits. During all phases of assembly/disassembly, rated capacity limits for loads imposed on the equipment, equipment components (including rigging), lifting lugs and equipment accessories, must not be exceeded for the equipment being assembled/disassembled.</p>	<p><u>(g) Capacity limits. During all phases of assembly/disassembly, rated capacity limits for loads imposed on the equipment, equipment components (including rigging), lifting lugs and equipment accessories, shall not be exceeded for the equipment being assembled/disassembled.</u></p>	
<p>(h) Addressing specific hazards. The A/D</p>	<p><u>(h) Addressing specific hazards. The A/D</u></p>	

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director supervising the assembly/disassembly operation must address the hazards associated with the operation, which include:	<u>director supervising the assembly/disassembly operation shall address the hazards associated with the operation, which include:</u>	
(1) Site and ground bearing conditions. Site and ground conditions must be adequate for safe assembly/disassembly operations and to support the equipment during assembly/disassembly (see § 1926.1402 for ground condition requirements).	<u>(1) Site and ground bearing conditions. Site and ground conditions shall be adequate for safe assembly/disassembly operations and to support the equipment during assembly/disassembly (see Section 4991.1 for ground condition requirements).</u>	
(2) Blocking material. The size, amount, condition and method of stacking the blocking must be sufficient to sustain the loads and maintain stability.	<u>(2) Blocking material. The size, amount, condition and method of stacking the blocking shall be sufficient to sustain the loads and maintain stability.</u>	
(3) Proper location of blocking. When used to support lattice booms or components, blocking must be appropriately placed to: (i) Protect the structural integrity of the equipment, and (ii) Prevent dangerous movement and collapse.	<u>(3) Proper location of blocking. When used to support lattice booms or components, blocking shall be appropriately placed to: (A) Protect the structural integrity of the equipment, and (B) Prevent dangerous movement and collapse.</u>	
(4) Verifying assist crane loads. When using an assist crane, the loads that will be imposed on the assist crane at each phase of assembly/disassembly must be verified in accordance with § 1926.1417(o)(3) before assembly/disassembly begins.	<u>(4) Verifying assist crane loads. When using an assist crane, the loads that will be imposed on the assist crane at each phase of assembly/disassembly shall be verified in accordance with Section 4999(b) before assembly/disassembly begins.</u>	
(5) Boom and jib pick points. The point(s) of attachment of rigging to a boom (or boom sections or jib or jib sections) must be suitable for preventing structural damage and facilitating safe handling of these components.	<u>(5) Boom and jib pick points. The point(s) of attachment of rigging to a boom (or boom sections or jib or jib sections) shall be suitable for preventing structural damage and facilitating safe handling of these components.</u>	
(6) Center of gravity. (i) The center of gravity of the load must be identified if that is necessary for the method used for maintaining stability. (ii) Where there is insufficient information to	<u>(6) Center of gravity. (A) The center of gravity of the load shall be identified if that is necessary for the method used for maintaining stability. (B) Where there is insufficient information to</u>	

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<p>accurately identify the center of gravity, measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity must be used. (See Non-mandatory Appendix B of this subpart for an example.)</p>	<p><u>accurately identify the center of gravity, measures designed to prevent unintended dangerous movement resulting from an inaccurate identification of the center of gravity shall be used.</u></p>	
<p>(7) Stability upon pin removal. The boom sections, boom suspension systems (such as gantry A-frames and jib struts), and components must be rigged or supported to maintain stability upon the removal of the pins.</p>	<p><u>(7) Stability upon pin removal. The boom sections, boom suspension systems (such as gantry A-frames and jib struts), and components shall be rigged or supported to maintain stability upon the removal of the pins.</u></p>	
<p>(8) Snagging. Suspension ropes and pendants must not be allowed to catch on the boom or jib connection pins or cotter pins (including keepers and locking pins).</p>	<p><u>(8) Snagging. Suspension ropes and pendants shall not be allowed to catch on the boom or jib connection pins or cotter pins (including keepers and locking pins).</u></p>	
<p>(9) Struck by counterweights. The potential for unintended movement from inadequately supported counterweights and from hoisting counterweights.</p>	<p><u>(9) Struck by counterweights. The potential for unintended movement from inadequately supported counterweights and from hoisting counterweights.</u></p>	
<p>(10) Boom hoist brake failure. Each time reliance is to be placed on the boom hoist brake to prevent boom movement during assembly/disassembly, the brake must be tested prior to such reliance to determine if it is sufficient to prevent boom movement. If it is not sufficient, a boom hoist pawl, other locking device/back-up braking device, or another method of preventing dangerous movement of the boom (such as blocking or using an assist crane) from a boom hoist brake failure must be used.</p>	<p><u>(10) Boom hoist brake failure. Each time reliance is to be placed on the boom hoist brake to prevent boom movement during assembly/disassembly, the brake shall be tested prior to such reliance to determine if it is sufficient to prevent boom movement. If it is not sufficient, a boom hoist pawl, other locking device/back-up braking device, or another method of preventing dangerous movement of the boom (such as blocking or using an assist crane) from a boom hoist brake failure shall be used.</u></p>	
<p>(11) Loss of backward stability. Backward stability before swinging the upperworks, travel, and when attaching or removing equipment components.</p>	<p><u>(11) Loss of backward stability. Backward stability before swinging the upperworks, travel, and when attaching or removing equipment components.</u></p>	

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(12) Wind speed and weather. The effect of wind speed and weather on the equipment.	<u>(12) Wind speed and weather. The effect of wind speed and weather on the equipment.</u>	
(i) [Reserved.]	<u>(i) [Reserved.]</u>	
(j) Cantilevered boom sections. Manufacturer limitations on the maximum amount of boom supported only by cantilevering must not be exceeded. Where these are unavailable, a registered professional engineer familiar with the type of equipment involved must determine in writing this limitation, which must not be exceeded.	<u>(j) Cantilevered boom sections. Manufacturer limitations on the maximum amount of boom supported only by cantilevering shall not be exceeded. Where these are unavailable, a certified agent familiar with the type of equipment involved shall determine in writing this limitation, which shall not be exceeded.</u>	
(k) Weight of components. The weight of each of the components must be readily available.	<u>(k) Weight of components. The weight of each of the components shall be readily available.</u>	
(l) [Reserved.]	<u>(l) [Reserved.]</u>	
(m) Components and configuration. (1) The selection of components, and configuration of the equipment, that affect the capacity or safe operation of the equipment must be in accordance with: (i) Manufacturer instructions, prohibitions, limitations, and specifications. Where these are unavailable, a registered professional engineer familiar with the type of equipment involved must approve, in writing, the selection and configuration of components; or (ii) Approved modifications that meet the requirements of § 1926.1434 (Equipment modifications). (2) Post-assembly inspection. Upon completion of assembly, the equipment must be inspected to ensure compliance with paragraph (m)(1) of this section (see § 1926.1412(c) for post-assembly inspection requirements).	<u>(m) Components and configuration. (1) The selection of components, and configuration of the equipment, that affect the capacity or safe operation of the equipment shall be in accordance with: (A) Manufacturer instructions, prohibitions, limitations, and specifications. Where these are unavailable, a certified agent familiar with the type of equipment involved shall approve, in writing, the selection and configuration of components; or (B) Approved modifications that meet the requirements of Section 4884.1 (Equipment Modifications). (2) Post-assembly inspection. Upon completion of assembly, the equipment shall be inspected to ensure compliance with subsection (m)(1) (see Section 5031.1 for post-assembly inspection requirements).</u>	
(n) [Reserved.]	<u>(n) [Reserved.]</u>	
(o) Shipping pins. Reusable shipping pins,	<u>(o) Shipping pins. Reusable shipping pins,</u>	

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<p>straps, links, and similar equipment must be removed. Once they are removed they must either be stowed or otherwise stored so that they do not present a falling object hazard.</p>	<p><u>straps, links, and similar equipment shall be removed. Once they are removed they shall either be stowed or otherwise stored so that they do not present a falling object hazard.</u></p>	
<p>(p) Pile driving. Equipment used for pile driving must not have a jib attached during pile driving operations.</p>	<p><u>(p) Pile driving. Equipment used for pile driving shall not have a jib attached during pile driving operations.</u></p>	
<p>(q) Outriggers and Stabilizers. When the load to be handled and the operating radius require the use of outriggers or stabilizers, or at any time when outriggers or stabilizers are used, all of the following requirements must be met (except as otherwise indicated):</p> <p>(1) The outriggers or stabilizers must be either fully extended or, if manufacturer procedures permit, deployed as specified in the load chart.</p> <p>(2) The outriggers must be set to remove the equipment weight from the wheels, except for locomotive cranes (see paragraph (q)(6) of this section for use of outriggers on locomotive cranes). This provision does not apply to stabilizers.</p> <p>(3) When outrigger floats are used, they must be attached to the outriggers. When stabilizer floats are used, they must be attached to the stabilizers.</p> <p>(4) Each outrigger or stabilizer must be visible to the operator or to a signal person during extension and setting.</p> <p>(5) Outrigger and stabilizer blocking must:</p> <p>(i) Meet the requirements in paragraphs (h)(2) and (h)(3) of this section.</p> <p>(ii) Be placed only under the outrigger or stabilizer float/pad of the jack or, where the outrigger or stabilizer is designed without a</p>	<p><u>(q) Outriggers and Stabilizers. When the load to be handled and the operating radius require the use of outriggers or stabilizers, or at any time when outriggers or stabilizers are used, all of the following requirements shall be met (except as otherwise indicated):</u></p> <p><u>(1) The outriggers or stabilizers shall be either fully extended or, if manufacturer procedures permit, deployed as specified in the load chart.</u></p> <p><u>(2) The outriggers shall be set to remove the equipment weight from the wheels, except for locomotive cranes (see subsection (q)(6) for use of outriggers on locomotive cranes). This provision does not apply to stabilizers.</u></p> <p><u>(3) When outrigger floats are used, they shall be attached to the outriggers. When stabilizer floats are used, they shall be attached to the stabilizers.</u></p> <p><u>(4) Each outrigger or stabilizer shall be visible to the operator or to a signal person during extension and setting.</u></p> <p><u>(5) Outrigger and stabilizer blocking shall:</u></p> <p><u>(A) Meet the requirements in subsection (h)(2) and (h)(3).</u></p> <p><u>(B) Be placed only under the outrigger or stabilizer float/pad of the jack or, where the outrigger or stabilizer is designed without a jack, under the outer bearing surface of the</u></p>	

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<p>jack, under the outer bearing surface of the extended outrigger or stabilizer beam. (6) For locomotive cranes, when using outriggers or stabilizers to handle loads, the manufacturer’s procedures must be followed. When lifting loads without using outriggers or stabilizers, the manufacturer’s procedures must be met regarding truck wedges or screws.</p>	<p><u>extended outrigger or stabilizer beam.</u> <u>(6) For locomotive cranes, when using outriggers or stabilizers to handle loads, the manufacturer’s procedures shall be followed.</u> <u>When lifting loads without using outriggers or stabilizers, the manufacturer’s procedures shall be met regarding truck wedges or screws.</u></p>	
<p>(r) Rigging. In addition to following the requirements in 29 CFR 1926.251 and other requirements in this and other standards applicable to rigging, when rigging is used for assembly/disassembly, the employer must ensure that: (1) The rigging work is done by a qualified rigger. (2) Synthetic slings are protected from: Abrasive, sharp or acute edges, and configurations that could cause a reduction of the sling’s rated capacity, such as distortion or localized compression.</p>	<p><u>(r) Rigging. In addition to following the requirements in Article 101 of these Orders and other requirements in this and other standards applicable to rigging, when rigging is used for assembly/disassembly, the employer shall ensure that:</u> <u>(1) The rigging work is done by a qualified rigger.</u> <u>(2) Synthetic slings are protected from abrasive, sharp or acute edges, and configurations that could cause a reduction of the sling’s rated capacity, such as distortion or localized compression.</u></p>	
<p>Note: Requirements for the protection of wire rope slings are contained in 29 CFR 1926.251(c)(9). (3) When synthetic slings are used, the synthetic sling manufacturer’s instructions, limitations, specifications and recommendations must be followed.</p>	<p><u>(3) Additional requirements for the protection of all types of slings are contained in Article 101 of these Orders.</u></p>	<p>State is more protective; Article 101 is not limited to wire rope and synthetic slings.</p>
<p>§ 1926.1405 Disassembly—additional requirements for dismantling of booms and jibs (applies to both the use of manufacturer procedures and employer procedures).</p>	<p><u>§5010.2. Disassembly – Additional Requirements for Dismantling of Booms and Jibs (Applies to Both the Use of Manufacturer Procedures and Employer Procedures).</u></p>	
<p><i>Dismantling (including dismantling for changing the length of) booms and jibs.</i></p>	<p><u>NOTE: “Dismantling” includes dismantling for changing the length of booms and jibs.</u></p>	

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<p>(a) None of the pins in the pendants are to be removed (partly or completely) when the pendants are in tension.</p>	<p><u>(a) None of the pins in the pendants are to be removed (partly or completely) when the pendants are in tension.</u></p>	
<p>(b) None of the pins (top or bottom) on boom sections located between the pendant attachment points and the crane/derrick body are to be removed (partly or completely) when the pendants are in tension.</p>	<p><u>(b) None of the pins (top or bottom) on boom sections located between the pendant attachment points and the crane/derrick body are to be removed (partly or completely) when the pendants are in tension.</u></p>	
<p>(c) None of the pins (top or bottom) on boom sections located between the uppermost boom section and the crane/derrick body are to be removed (partly or completely) when the boom is being supported by the uppermost boom section resting on the ground (or other support).</p>	<p><u>(c) None of the pins (top or bottom) on boom sections located between the uppermost boom section and the crane/derrick body are to be removed (partly or completely) when the boom is being supported by the uppermost boom section resting on the ground (or other support).</u></p>	
<p>(d) None of the top pins on boom sections located on the cantilevered portion of the boom being removed (the portion being removed ahead of the pendant attachment points) are to be removed (partly or completely) until the cantilevered section to be removed is fully supported.</p>	<p><u>(d) None of the top pins on boom sections located on the cantilevered portion of the boom being removed (the portion being removed ahead of the pendant attachment points) are to be removed (partly or completely) until the cantilevered section to be removed is fully supported.</u></p>	
<p>§ 1926.1406 Assembly/Disassembly – employer procedures – general requirements.</p>	<p><u>§5010.3. Assembly/Disassembly – Employer Procedures – General Requirements.</u></p>	
<p>(a) When using employer procedures instead of manufacturer procedures for assembly/disassembly, the employer must ensure that the procedures: (1) Prevent unintended dangerous movement, and prevent collapse, of any part of the equipment. (2) Provide adequate support and stability of all parts of the equipment. (3) Position employees involved in the assembly/disassembly operation so that their</p>	<p><u>(a) When using employer procedures instead of manufacturer procedures for assembly/disassembly, the employer shall ensure that the procedures: (1) Prevent unintended dangerous movement, and prevent collapse, of any part of the equipment. (2) Provide adequate support and stability of all parts of the equipment. (3) Position employees involved in the assembly/disassembly operation so that their</u></p>	

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<p>exposure to unintended movement or collapse of part or all of the equipment is minimized.</p>	<p><u>exposure to unintended movement or collapse of part or all of the equipment is minimized.</u></p>	
<p>(b) Qualified person. Employer procedures must be developed by a qualified person.</p>	<p><u>(b) Employer procedures shall be developed by a certified agent.</u></p>	
<p>§ 1926.1407 Power line safety (up to 350kV)—assembly and disassembly.</p>	<p><u>§5010.4. Power Line Safety (Up to and Including 350kV) – Assembly and Disassembly.</u></p>	
<p>(a) Before assembling or disassembling equipment, the employer must determine if any part of the equipment, load line, or load (including rigging and lifting accessories) could get, in the direction or area of assembly/disassembly, closer than 20 feet to a power line during the assembly/disassembly process. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:</p>	<p><u>(a) Before assembling or disassembling equipment, the employer shall determine if any part of the equipment, load line, or load (including rigging and lifting accessories) could get, in the direction or area of assembly/disassembly, closer than 20 feet to a power line during the assembly/disassembly process. If so, the employer shall meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:</u></p>	
<p>(1) Option (1)—Deenergize and ground. Confirm from the utility owner/operator that the power line has been deenergized and visibly grounded at the worksite.</p>	<p><u>(1) Option (1) – De-energize and ground. Confirm from the utility owner/operator that the power line has been de-energized and visibly grounded at the worksite.</u></p>	
<p>(2) Option (2)—20 foot clearance. Ensure that no part of the equipment, load line or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified in paragraph (b) of this section.</p>	<p><u>(2) Option (2) – 20 foot clearance. Ensure that no part of the equipment, load line or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified in subsection (b) of this section.</u></p>	
<p>(3) Option (3)—Table A clearance. (i) Determine the line’s voltage and the minimum clearance distance permitted under Table A (see § 1926.1408). (ii) Determine if any part of the equipment, load line, or load (including rigging and lifting accessories), could get closer than the minimum clearance distance to the power line permitted</p>	<p><u>(3) Option (3) – Table A clearance. (A) Determine the line’s voltage and the minimum clearance distance permitted under Table A (see Section 5003.1). (B) Determine if any part of the equipment, load line, or load (including rigging and lifting accessories), could get closer than the minimum clearance distance to the power line</u></p>	

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<p>under Table A (see § 1926.1408). If so, then the employer must follow the requirements in paragraph (b) of this section to ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum clearance distance.</p>	<p><u>permitted under Table A (see Section 5003.1). If so, then the employer shall follow the requirements in subsection (b) to ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer to the line than the minimum clearance distance.</u></p>	
<p>(b) Preventing encroachment/electrocution. Where encroachment precautions are required under Option (2), or Option (3) of this section, all of the following requirements must be met: (1) Conduct a planning meeting with the Assembly/Disassembly director (A/D director), operator, assembly/disassembly crew and the other workers who will be in the assembly/disassembly area to review the location of the power line(s) and the steps that will be implemented to prevent encroachment/electrocution. (2) If tag lines are used, they must be nonconductive. (3) At least one of the following additional measures must be in place. The measure selected from this list must be effective in preventing encroachment. The additional measures are: (i) Use a dedicated spotter who is in continuous contact with the equipment operator. The dedicated spotter must: (A) Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: A clearly visible line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such</p>	<p><u>(b) Preventing encroachment/electrocution. Where encroachment precautions are required under Option (2), or Option (3) of this section, all of the following requirements shall be met: (1) Conduct a planning meeting with the Assembly/Disassembly director (A/D director), operator, assembly/disassembly crew and the other workers who will be in the assembly/disassembly area to review the location of the power line(s) and the steps that will be implemented to prevent encroachment/electrocution. (2) If tag lines are used, they shall be nonconductive. (3) At least one of the following additional measures shall be in place. The measure selected from this list shall be effective in preventing encroachment. The additional measures are: (A) Use a dedicated spotter who is in continuous contact with the equipment operator. The dedicated spotter shall: 1. Be equipped with a visual aid to assist in identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: A clearly visible line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks</u></p>	

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<p>as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).</p> <p>(B) Be positioned to effectively gauge the clearance distance.</p> <p>(C) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.</p> <p>(D) Give timely information to the operator so that the required clearance distance can be maintained.</p> <p>(ii) A proximity alarm set to give the operator sufficient warning to prevent encroachment.</p> <p>(iii) A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator sufficient warning to prevent encroachment.</p> <p>(iv) A device that automatically limits range of movement, set to prevent encroachment.</p> <p>(v) An elevated warning line, barricade, or line of signs, in view of the operator, equipped with flags or similar high-visibility markings.</p>	<p><u>(such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).</u></p> <p><u>2. Be positioned to effectively gauge the clearance distance.</u></p> <p><u>3. Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.</u></p> <p><u>4. Give timely information to the operator so that the required clearance distance can be maintained.</u></p> <p><u>(B) A proximity alarm set to give the operator sufficient warning to prevent encroachment.</u></p> <p><u>(C) A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device shall be set to give the operator sufficient warning to prevent encroachment.</u></p> <p><u>(D) A device that automatically limits range of movement, set to prevent encroachment.</u></p> <p><u>(E) An elevated warning line, barricade, or line of signs, in view of the operator, equipped with flags or similar high-visibility markings.</u></p>	
<p>(c) Assembly/disassembly below power lines prohibited. No part of a crane/derrick, load line, or load (including rigging and lifting accessories), whether partially or fully assembled, is allowed below a power line unless the employer has confirmed that the utility owner/operator has deenergized and (at the worksite) visibly grounded the power line.</p>	<p><u>(c) Assembly/disassembly below power lines is prohibited. No part of a crane/derrick, load line, or load (including rigging and lifting accessories), whether partially or fully assembled, is allowed below a power line unless the employer has confirmed that the utility owner/operator has de-energized and (at the worksite) visibly grounded the power line.</u></p>	
<p>(d) Assembly/disassembly inside Table A clearance prohibited. No part of a crane/derrick, load line, or load (including rigging and lifting accessories), whether partially or fully</p>	<p><u>(d) Assembly/disassembly inside Table A clearance prohibited. No part of a crane/derrick, load line, or load (including rigging and lifting accessories), whether</u></p>	

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<p>assembled, is allowed closer than the minimum approach distance under Table A (see § 1926.1408) to a power line unless the employer has confirmed that the utility owner/operator has deenergized and (at the worksite) visibly grounded the power line.</p>	<p><u>partially or fully assembled, is allowed closer than the minimum approach distance under Table A (see Section 5003.1) to a power line unless the employer has confirmed that the utility owner/operator has de-energized and (at the worksite) visibly grounded the power line.</u></p>	
<p>(e) Voltage information. Where Option (3) of this section is used, the utility owner/operator of the power lines must provide the requested voltage information within two working days of the employer's request.</p>	<p><u>(e) Voltage information. Where Option (3) of this section is used, the utility owner/operator of the power lines shall provide the requested voltage information within two working days of the employer's request.</u></p>	
<p>(f) Power lines presumed energized. The employer must assume that all power lines are energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.</p>	<p><u>(f) Power lines presumed energized. The employer shall assume that all power lines are energized unless the utility owner/operator confirms that the power line has been and continues to be de-energized and visibly grounded at the worksite.</u></p>	
<p>(g) Posting of electrocution warnings. There must be at least one electrocution hazard warning conspicuously posted in the cab so that it is in view of the operator and (except for overhead gantry and tower cranes) at least two on the outside of the equipment.</p>	<p><u>(g) Posting of electrocution warnings. There shall be at least one electrocution hazard warning conspicuously posted in the cab so that it is in view of the operator and (except for overhead gantry and tower cranes) at least two on the outside of the equipment.</u></p>	
<p>§ 1926.1408 Power line safety (up to 350kV)—equipment operations.</p>	<p><u>§5003.1. Power Line Safety (Up to and Including 350kV) – Equipment Operations.</u></p>	
<p>(a) Hazard assessments and precautions inside the work zone. Before beginning equipment operations, the employer must: (1) Identify the work zone by either: (i) Demarcating boundaries (such as with flags, or a device such as a range limit device or range control warning device) and prohibiting the operator from operating the equipment past those boundaries, or (ii) Defining the work zone as the area 360</p>	<p><u>(a) Hazard assessments and precautions inside the work zone. Before beginning equipment operations, the employer shall: (1) Identify the work zone by either: (A) Demarcating boundaries (such as with flags, or a device such as a range limit device or range control warning device) and prohibiting the operator from operating the equipment past those boundaries, or (B) Defining the work zone as the area 360</u></p>	

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<p>degrees around the equipment, up to the equipment's maximum working radius.</p> <p>(2) Determine if any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:</p> <p>(i) Option (1)—Deenergize and ground. Confirm from the utility owner/operator that the power line has been deenergized and visibly grounded at the worksite.</p> <p>(ii) Option (2)—20 foot clearance. Ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified in paragraph (b) of this section.</p> <p>(iii) Option (3)—Table A clearance.</p> <p>(A) Determine the line's voltage and the minimum approach distance permitted under Table A (see § 1926.1408).</p> <p>(B) Determine if any part of the equipment, load line or load (including rigging and lifting accessories), while operating up to the equipment's maximum working radius in the work zone, could get closer than the minimum approach distance of the power line permitted under Table A (see § 1926.1408). If so, then the employer must follow the requirements in paragraph (b) of this section to ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets</p>	<p><u>degrees around the equipment, up to the equipment's maximum working radius.</u></p> <p><u>(2) Determine if any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line. If so, the employer shall meet the requirements in Option (1), Option (2), or Option (3) of this section, as follows:</u></p> <p><u>(A) Option (1)—De-energize and ground. Confirm from the utility owner/operator that the power line has been de-energized and visibly grounded at the worksite.</u></p> <p><u>(B) Option (2)—20 foot clearance. Ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer than 20 feet to the power line by implementing the measures specified in subsection (b) of this section.</u></p> <p><u>(C) Option (3)—Table A clearance.</u></p> <p><u>1. Determine the line's voltage and the minimum approach distance permitted under Table A.</u></p> <p><u>2. Determine if any part of the equipment, load line or load (including rigging and lifting accessories), while operating up to the equipment's maximum working radius in the work zone, could get closer than the minimum approach distance of the power line permitted under Table A. If so, then the employer shall follow the requirements in subsection (b) of this section to ensure that no part of the equipment, load line, or load (including rigging and lifting accessories), gets closer to the line</u></p>	
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<p>closer to the line than the minimum approach distance.</p>	<p><u>than the minimum approach distance.</u></p>	
<p>(b) Preventing encroachment/electrocution. Where encroachment precautions are required under Option (2) or Option (3) of this section, all of the following requirements must be met: (1) Conduct a planning meeting with the operator and the other workers who will be in the area of the equipment or load to review the location of the power line(s), and the steps that will be implemented to prevent encroachment/electrocution. (2) If tag lines are used, they must be non-conductive. (3) Erect and maintain an elevated warning line, barricade, or line of signs, in view of the operator, equipped with flags or similar high-visibility markings, at 20 feet from the power line (if using Option (2) of this section) or at the minimum approach distance under Table A (see § 1926.1408) (if using Option (3) of this section). If the operator is unable to see the elevated warning line, a dedicated spotter must be used as described in § 1926.1408(b)(4)(ii) in addition to implementing one of the measures described in §§ 1926.1408(b)(4)(i), (iii), (iv) and (v).</p>	<p><u>(b) Preventing encroachment/electrocution. Where encroachment precautions are required under Option (2) or Option (3) of this section, all of the following requirements shall be met:</u> <u>(1) Conduct a planning meeting with the operator and the other workers who will be in the area of the equipment or load to review the location of the power line(s), and the steps that will be implemented to prevent encroachment/electrocution.</u> <u>(2) If tag lines are used, they shall be non-conductive.</u> <u>(3) Erect and maintain an elevated warning line, barricade, or line of signs, in view of the operator, equipped with flags or similar high-visibility markings, at 20 feet from the power line (if using Option (2) of this section) or at the minimum approach distance under Table A (if using Option (3) of this section). If the operator is unable to see the elevated warning line, a dedicated spotter must be used as described in subsection (b)(4)(A) in addition to implementing one of the measures described in subsections (b)(4)(B) and (C).</u></p>	
<p>(4) Implement at least one of the following measures: (i) A proximity alarm set to give the operator sufficient warning to prevent encroachment. (ii) A dedicated spotter who is in continuous contact with the operator. Where this measure is selected, the dedicated spotter must: (A) Be equipped with a visual aid to assist in</p>	<p><u>(4) Implement at least one of the following measures:</u> <u>(A) A dedicated spotter who is in continuous contact with the operator. Where this measure is selected, the dedicated spotter shall:</u> <u>1. Be equipped with a visual aid to assist in identifying the minimum clearance distance.</u> <u>Examples of a visual aid include, but are not</u></p>	<p>Same as previously adopted for CSO Section 1612.1 which is being relocated to this GISO section.</p>

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<p>identifying the minimum clearance distance. Examples of a visual aid include, but are not limited to: A clearly visible line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).</p> <p>(B) Be positioned to effectively gauge the clearance distance.</p> <p>(C) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.</p> <p>(D) Give timely information to the operator so that the required clearance distance can be maintained.</p> <p>(iii) A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device must be set to give the operator sufficient warning to prevent encroachment.</p> <p>(iv) A device that automatically limits range of movement, set to prevent encroachment.</p> <p>(v) An insulating link/device, as defined in § 1926.1401, installed at a point between the end of the load line (or below) and the load.</p>	<p><u>limited to: A clearly visible line painted on the ground, a clearly visible line of stanchions, a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).</u></p> <p><u>2. Be positioned to effectively gauge the clearance distance.</u></p> <p><u>3. Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.</u></p> <p><u>4. Give timely information to the operator so that the required clearance distance can be maintained.</u></p> <p><u>(B) A device that automatically warns the operator when to stop movement, such as a range control warning device. Such a device shall be set to give the operator sufficient warning to prevent encroachment.</u></p> <p><u>(C) A device that automatically limits range of movement, set to prevent encroachment.</u></p>	
<p>(5) The requirements of paragraph (b)(4) of this section do not apply to work covered by subpart V of this part.</p>		<p>Subsection (b)(4) supplements Title 8 HV-ESO.</p>
<p>(c) Voltage information. Where Option (3) of this section is used, the utility owner/operator of the power lines must provide the requested voltage information within two working days of the employer's request.</p>	<p><u>(c) Voltage information. Where Option (3) of this section is used, the utility owner/operator of the power lines shall provide the requested voltage information within two working days of the employer's request.</u></p>	
<p>(d) Operations below power lines.</p>	<p><u>(d) Operations below power lines.</u></p>	

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<p>(1) No part of the equipment, load line, or load (including rigging and lifting accessories) is allowed below a power line unless the employer has confirmed that the utility owner/operator has deenergized and (at the worksite) visibly grounded the power line, except where one of the exceptions in paragraph (d)(2) of this section applies.</p> <p>(2) Exceptions. Paragraph (d)(1) of this section is inapplicable where the employer demonstrates that one of the following applies:</p> <p>(i) The work is covered by subpart V of this part.</p> <p>(ii) For equipment with non-extensible booms: The uppermost part of the equipment, with the boom at true vertical, would be more than 20 feet below the plane of the power line or more than the Table A of this section minimum clearance distance below the plane of the power line.</p> <p>(iii) For equipment with articulating or extensible booms: The uppermost part of the equipment, with the boom in the fully extended position, at true vertical, would be more than 20 feet below the plane of the power line or more than the Table A of this section minimum clearance distance below the plane of the power line.</p> <p>(iv) The employer demonstrates that compliance with paragraph (d)(1) of this section is infeasible and meets the requirements of § 1926.1410.</p>	<p><u>(1) No part of the equipment, load line, or load (including rigging and lifting accessories) is allowed below a power line unless the employer has confirmed that the utility owner/operator has de-energized and (at the worksite) visibly grounded the power line, except where one of the exceptions in subsection (d)(2) of this section applies.</u></p> <p><u>(2) EXCEPTIONS. Subsection (d)(1) of this section is inapplicable where the employer demonstrates that one of the following applies:</u></p> <p><u>(A) The work is covered by Title 8 High-Voltage Electrical Safety Orders.</u></p> <p><u>(B) For equipment with non-extensible booms: The uppermost part of the equipment, with the boom at true vertical, would be more than 20 feet below the plane of the power line or more than the Table A of this section minimum clearance distance below the plane of the power line.</u></p> <p><u>(C) For equipment with articulating or extensible booms: The uppermost part of the equipment, with the boom in the fully extended position, at true vertical, would be more than 20 feet below the plane of the power line or more than the Table A of this section minimum clearance distance below the plane of the power line.</u></p> <p><u>(D) The employer demonstrates that compliance with subsection (d)(1) of this section is infeasible and meets the requirements of Section 5003.3.</u></p>	
<p>(e) Power lines presumed energized. The employer must assume that all power lines are energized unless the utility owner/operator</p>	<p><u>§ 5003.1(e) Power lines presumed energized. The employer shall assume that all power lines are energized unless the utility owner/operator</u></p>	

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<p>confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.</p>	<p><u>confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.</u></p>	
<p>(f) When working near transmitter/communication towers where the equipment is close enough for an electrical charge to be induced in the equipment or materials being handled, the transmitter must be de-energized or the following precautions must be taken: (1) The equipment must be provided with an electrical ground. (2) If tag lines are used, they must be non-conductive.</p>	<p><u>§5003.1(f) When working where a hazardous electrical charge is induced in the equipment or materials being handled, the transmitter or other source shall be de-energized or one of the following precautions shall be taken:</u> <u>(1) The equipment shall be electrically grounded and if tag lines are used they shall be non-conductive;</u> <u>(2) A non-conductive insulating link shall be used between the hook and the load; or</u> <u>(3) A non-conductive hoisting rope shall be used.</u></p>	<p>As modified by AC2.</p>
<p>(g) Training. (1) The employer must train each operator and crew member assigned to work with the equipment on all of the following: (i) The procedures to be followed in the event of electrical contact with a power line. Such training must include: (A) Information regarding the danger of electrocution from the operator simultaneously touching the equipment and the ground. (B) The importance to the operator's safety of remaining inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab. (C) The safest means of evacuating from equipment that may be energized. (D) The danger of the potentially energized zone around the equipment (step potential).</p>	<p><u>(g) Training.</u> <u>(1) The employer shall train each operator and crew member assigned to work with the equipment on all of the following:</u> <u>(A) The procedures to be followed in the event of electrical contact with a power line. Such training shall include:</u> <u>1. Information regarding the danger of electrocution from the operator simultaneously touching the equipment and the ground.</u> <u>2. The importance to the operator's safety of remaining inside the cab except where there is an imminent danger of fire, explosion, or other emergency that necessitates leaving the cab.</u> <u>3. The safest means of evacuating from equipment that may be energized.</u> <u>4. The danger of the potentially energized zone around the equipment (step potential) and the methods for emergency evacuation in an energized condition.</u></p>	<p>As modified by AC2.</p>

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<p>(E) The need for crew in the area to avoid approaching or touching the equipment and the load. (F) Safe clearance distance from power lines. (ii) Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite. (iii) Power lines are presumed to be uninsulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a line is insulated. (iv) The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used. (v) The procedures to be followed to properly ground equipment and the limitations of grounding.</p>	<p><u>5. The need for crew in the area to avoid approaching or touching the equipment and the load.</u> <u>6. Safe clearance distance from power lines.</u> <u>(B) Power lines are presumed to be energized unless the utility owner/operator confirms that the power line has been and continues to be deenergized and visibly grounded at the worksite.</u> <u>(C) Power lines are presumed to be uninsulated unless the utility owner/operator or a registered engineer who is a qualified person with respect to electrical power transmission and distribution confirms that a line is insulated.</u> <u>(D) The limitations of an insulating link/device, proximity alarm, and range control (and similar) device, if used.</u> <u>(E) The procedures to be followed to properly ground equipment and the limitations of grounding.</u></p>	
<p>(2) Employees working as dedicated spotters must be trained to enable them to effectively perform their task, including training on the applicable requirements of this section. (3) Training under this section must be administered in accordance with § 1926.1430(g).</p>	<p><u>(2) Employees working as dedicated spotters shall be trained to enable them to effectively perform their task, including training on the applicable requirements of this section.</u> <u>(3) Training under this section shall be administered in accordance with Section 3203.</u></p>	
<p>(h) Devices originally designed by the manufacturer for use as: A safety device (see § 1926.1415), operational aid, or a means to prevent power line contact or electrocution, when used to comply with this section, must meet the manufacturer’s procedures for use and conditions of use.</p>	<p><u>(h) Devices originally designed by the manufacturer for use as: A safety device (see Section 5017), operational aid, or a means to prevent power line contact or electrocution, when used to comply with this section, shall meet the manufacturer’s procedures for use and conditions of use.</u></p>	
<p>TABLE A—MINIMUM CLEARANCE DISTANCES Voltage</p>	<p>TABLE A—MINIMUM CLEARANCE DISTANCES Voltage Minimum clearance distance</p>	<p>CA Section 5003.1, Table A, has been</p>

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<p>(nominal, kV, alternating current) Minimum clearance distance (feet) up to 50 10 over 50 to 200 15 over 200 to 350 20 over 350 to 500 25 over 500 to 750 35 over 750 to 1,000 45 over 1,000</p> <p>(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution). Note: The value that follows “to” is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>(nominal, kV, alternating current)</u></th> <th style="text-align: left;"><u>(feet)</u></th> </tr> </thead> <tbody> <tr> <td><u>up to 50</u></td> <td><u>10</u></td> </tr> <tr> <td><u>over 50 to 175</u></td> <td><u>15</u></td> </tr> <tr> <td><u>over 175 to 350</u></td> <td><u>20</u></td> </tr> <tr> <td><u>over 350 to 550</u></td> <td><u>27</u></td> </tr> <tr> <td><u>over 550 to 1,000</u></td> <td><u>45</u></td> </tr> <tr> <td><u>over 1,000</u></td> <td><u>(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).</u></td> </tr> </tbody> </table> <p>NOTE: The value that follows “to” is up to and includes that value. For example, over 50 to 200 means up to and including 200kV.</p>	<u>(nominal, kV, alternating current)</u>	<u>(feet)</u>	<u>up to 50</u>	<u>10</u>	<u>over 50 to 175</u>	<u>15</u>	<u>over 175 to 350</u>	<u>20</u>	<u>over 350 to 550</u>	<u>27</u>	<u>over 550 to 1,000</u>	<u>45</u>	<u>over 1,000</u>	<u>(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).</u>	<p>coordinated with CA High-Voltage Electrical Safety Orders, Section 2946, Table 2. CA Table A Voltages and Clearances are based on Federal Table A or CA Section 2946, Table 2, whichever is more protective.</p> <p>Note: Although Table A is similar to Section 2946 Table 2, Table A is referenced numerous times throughout this standard, and it would be difficult (not impossible) to replace with a cross-reference to Section 2946 Table 2. Furthermore, Section 2946 Table 2 does not apply below 600V.</p>
<u>(nominal, kV, alternating current)</u>	<u>(feet)</u>															
<u>up to 50</u>	<u>10</u>															
<u>over 50 to 175</u>	<u>15</u>															
<u>over 175 to 350</u>	<u>20</u>															
<u>over 350 to 550</u>	<u>27</u>															
<u>over 550 to 1,000</u>	<u>45</u>															
<u>over 1,000</u>	<u>(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).</u>															
<p>§ 1926.1409 Power line safety (over 350kV). The requirements of § 1926.1407 and § 1926.1408 apply to power lines over 350 kV except: (a) For power lines at or below 1000 kV, wherever the distance “20 feet” is specified, the distance “50 feet” must be substituted; and (b) For power lines over 1000 kV, the minimum clearance distance must be established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.</p>	<p>§5003.2. Power Line Safety (Over 350kV). <u>The requirements of Section 5010.4 and Section 5003.1 apply to power lines over 350kV except:</u> <u>(a) For power lines at or below 1000kV, wherever the distance “20 feet” is specified, the distance “50 feet” shall be substituted; and</u> <u>(b) For power lines over 1000kV, the minimum clearance distance shall be established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.</u></p>															
<p>§ 1926.1410 Power line safety (all voltages)—equipment operations closer than the Table A zone. Equipment operations in which any part of the equipment, load line, or load (including rigging and lifting accessories) is closer than the minimum approach distance under Table A of § 1926.1408 to an energized power line is</p>	<p>§5003.3. Power Line Safety (All Voltages) – Equipment Operations Closer Than the Table A Zone. <u>(a) Equipment operations in which any part of the equipment, load line, or load (including rigging and lifting accessories) is closer than the minimum approach distance under Table A of Section 5003.1 to an energized power line is</u></p>	<p>With the exception of the text shown, CA does not propose to adopt the balance of this section. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and 2944(d)].</p>														

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<p>prohibited, except where the employer demonstrates that all of the following requirements are met: (a) The employer determines that it is infeasible to do the work without breaching the minimum approach distance under Table A of § 1926.1408. (b) The employer determines that, after consultation with the utility owner/operator, it is infeasible to deenergize and ground the power line or relocate the power line.</p>	<p><u>prohibited except as permitted by the High-Voltage Electrical Safety Orders.</u></p>	
	<p><u>(b) Except where overhead electrical distribution and transmission lines have been de-energized and visibly grounded, the operation, erection, or handling of tools, machinery, apparatus, supplies, or materials, or any part thereof, over power lines is prohibited.</u> <u>EXCEPTION TO SUBSECTION (b): Tower cranes equipped with limit switches or other systems that automatically control slew, trolley and boom travel to prevent moving any portion of the load or load line within a horizontal proximity to power lines closer than the minimum clearances set forth in Table A of Section 5003.1.</u></p>	<p>State subsection (b) with exception has been added for consistency and equivalency with HVESO Section 2946(b)(1).</p>
<p>(c) Minimum clearance distance. (1) The power line owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution determines the minimum clearance distance that must be maintained to prevent electrical contact in light of the on-site conditions. The factors that must be considered in making this determination include, but are not limited to: Conditions affecting atmospheric</p>		<p>With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and 2944(d)].</p>

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<p>conductivity; time necessary to bring the equipment, load line, and load (including rigging and lifting accessories) to a complete stop; wind conditions; degree of sway in the power line; lighting conditions, and other conditions affecting the ability to prevent electrical contact.</p> <p>(2) Paragraph (c)(1) of this section does not apply to work covered by subpart V of this part; instead, for such work, the minimum clearance distances specified in § 1926.950 Table V-1 apply. Employers engaged in subpart V work are permitted to work closer than the distances in § 1926.950 Table V-1 where both the requirements of this section and § 1926.952(c)(3)(i) or (ii) are met.</p>		
<p>(d) A planning meeting with the employer and utility owner/operator (or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution) is held to determine the procedures that will be followed to prevent electrical contact and electrocution. At a minimum these procedures must include:</p> <p>(1) If the power line is equipped with a device that automatically reenergizes the circuit in the event of a power line contact, before the work begins, the automatic reclosing feature of the circuit interrupting device must be made inoperative if the design of the device permits.</p>		<p>With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and 2944(d)].</p>
<p>(2) A dedicated spotter who is in continuous contact with the operator. The dedicated spotter must:</p> <p>(i) Be equipped with a visual aid to assist in identifying the minimum clearance distance.</p>		<p>With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and</p>

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<p>Examples of a visual aid include, but are not limited to: A line painted on the ground; a clearly visible line of stanchions; a set of clearly visible line-of-sight landmarks (such as a fence post behind the dedicated spotter and a building corner ahead of the dedicated spotter).</p> <p>(ii) Be positioned to effectively gauge the clearance distance.</p> <p>(iii) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.</p> <p>(iv) Give timely information to the operator so that the required clearance distance can be maintained.</p>		<p>2944(d)].</p>
<p>(3) An elevated warning line, or barricade (not attached to the crane), in view of the operator (either directly or through video equipment), equipped with flags or similar high-visibility markings, to prevent electrical contact. However, this provision does not apply to work covered by subpart V of this part.</p>		
<p>(4) Insulating link/device.</p> <p>(i) An insulating link/device installed at a point between the end of the load line (or below) and the load.</p> <p>(ii) For work covered by subpart V of this part, the requirement in paragraph (d)(4)(i) of this section applies only when working inside the § 1926.950 Table V-1 clearance distances.</p> <p>(iii) For work covered by subpart V of this part involving operations where use of an insulating link/device is infeasible, the requirements of § 1910.269(p)(4)(iii)(B) or (C) may be substituted for the requirement in (d)(4)(i) of this section.</p>		<p>With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and 2944(d)].</p>

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<p>(iv) Until November 8, 2011, the following procedure may be substituted for the requirement in paragraph (d)(4)(i) of this section: All employees, excluding equipment operators located on the equipment, who may come in contact with the equipment, the load line, or the load must be insulated or guarded from the equipment, the load line, and the load. Insulating gloves rated for the voltage involved are adequate insulation for the purposes of this paragraph. (v) Until November 8, 2013, the following procedure may be substituted for the requirement in (d)(4)(i) of this section: (A) The employer must use a link/device manufactured on or before November 8, 2011, that meets the definition of an insulating link/device, except that it has not been approved by a Nationally Recognized Testing Laboratory, and that is maintained and used in accordance with manufacturer requirements and recommendations, and is installed at a point between the end of the load line (or below) and the load; and (B) All employees, excluding equipment operators located on the equipment, who may come in contact with the equipment, the load line, or the load must be insulated or guarded from the equipment, the load line, and the load through an additional means other than the device described in paragraph (d)(4)(v)(A) of this section. Insulating gloves rated for the voltage involved are adequate additional means of protection for the purposes of this paragraph.</p>		
<p>(5) Nonconductive rigging if the rigging may be within the Table A of § 1926.1408 distance</p>		

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during the operation.		
(6) If the equipment is equipped with a device that automatically limits range of movement, it must be used and set to prevent any part of the equipment, load line, or load (including rigging and lifting accessories) from breaching the minimum approach distance established under paragraph (c) of this section. (7) If a tag line is used, it must be of the nonconductive type.		With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and 2944(d)].
(8) Barricades forming a perimeter at least 10 feet away from the equipment to prevent unauthorized personnel from entering the work area. In areas where obstacles prevent the barricade from being at least 10 feet away, the barricade must be as far from the equipment as feasible.		
(9) Workers other than the operator must be prohibited from touching the load line above the insulating link/device and crane. Operators remotely operating the equipment from the ground must use either wireless controls that isolate the operator from the equipment or insulating mats that insulate the operator from the ground.		
(10) Only personnel essential to the operation are permitted to be in the area of the crane and load. (11) The equipment must be properly grounded. (12) Insulating line hose or cover-up must be installed by the utility owner/operator except where such devices are unavailable for the line voltages involved.		With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section 2946(b)(3). [See also Sections 2940.7 and 2944(d)].
(e) The procedures developed to comply with paragraph (d) of this section are documented and immediately available on-site.		

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<p>(f) The equipment user and utility owner/operator (or registered professional engineer) meet with the equipment operator and the other workers who will be in the area of the equipment or load to review the procedures that will be implemented to prevent breaching the minimum approach distance established in paragraph (c) of this section and prevent electrocution.</p>		
<p>(g) The procedures developed to comply with paragraph (d) of this section are implemented.</p>		
<p>(h) The utility owner/operator (or registered professional engineer) and all employers of employees involved in the work must identify one person who will direct the implementation of the procedures. The person identified in accordance with this paragraph must direct the implementation of the procedures and must have the authority to stop work at any time to ensure safety.</p> <p>(i) [Reserved.]</p>		
<p>(j) If a problem occurs implementing the procedures being used to comply with paragraph (d) of this section, or indicating that those procedures are inadequate to prevent electrocution, the employer must safely stop operations and either develop new procedures to comply with paragraph (d) of this section or have the utility owner/operator deenergize and visibly ground or relocate the power line before resuming work.</p>		
<p>(k) Devices originally designed by the manufacturer for use as a safety device (see § 1926.1415), operational aid, or a means to prevent power line contact or electrocution,</p>		<p>With the exception of the text shown above, CA does not propose to adopt the balance of 1926.1410. CA standards are more protective. See HVESO Section 2946, particularly Section</p>

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<p>when used to comply with this section, must comply with the manufacturer’s procedures for use and conditions of use. (l) [Reserved.] (m) The employer must train each operator and crew member assigned to work with the equipment in accordance with § 1926.1408(g).</p>		<p>2946(b)(3). [See also Sections 2940.7 and 2944(d)].</p>
<p>§ 1926.1411 Power line safety—while traveling under or near power lines with no load.</p>	<p><u>§5003.4. Power Line Safety - While Traveling Under or Near Power Lines with No Load.</u></p>	
<p>(a) This section establishes procedures and criteria that must be met for equipment traveling under or near a power line on a construction site with no load. Equipment traveling on a construction site with a load is governed by §§ 1926.1408, 1926.1409 or 1926.1410, whichever is appropriate, and § 1926.1417(u).</p>	<p><u>(a) This section establishes procedures and criteria that shall be met for equipment traveling under or near a power line on a construction site with no load. Equipment traveling on a construction site with a load is governed by Sections 5003.1, 5003.2 or 5003.3, whichever is appropriate, and Section 4991(c) and (d).</u></p>	
	<p><u>(1) The provisions of Electrical Safety Orders, Group 2, Article 37, shall also apply to any work in proximity to overhead power lines where more protective.</u></p>	<p>Subsection (a)(1) added to assure that provisions of California High-Voltage Electrical Safety Orders, which apply to all work in proximity to overhead lines, are not negated or superseded by this section.</p>
<p>(b) The employer must ensure that: (1) The boom/mast and boom/mast support system are lowered sufficiently to meet the requirements of this paragraph. (2) The clearances specified in Table T of this section are maintained. (3) The effects of speed and terrain on equipment movement (including movement of the boom/mast) are considered so that those effects do not cause the minimum clearance distances specified in Table T of this section to be breached.</p>	<p><u>(b) The employer shall ensure that: (1) The boom/mast and boom/mast support system are lowered sufficiently to meet the requirements of this section. (2) The clearances specified in Table T of this section are maintained. (3) The effects of speed and terrain on equipment movement (including movement of the boom/mast) are considered so that those effects do not cause the minimum clearance distances specified in Table T of this section to be breached.</u></p>	

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(4) Dedicated spotter. If any part of the equipment while traveling will get closer than 20 feet to the power line, the employer must ensure that a dedicated spotter who is in continuous contact with the driver/operator is used. The dedicated spotter must:

- (i) Be positioned to effectively gauge the clearance distance.
- (ii) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.
- (iii) Give timely information to the operator so that the required clearance distance can be maintained.

(5) Additional precautions for traveling in poor visibility. When traveling at night, or in conditions of poor visibility, in addition to the measures specified in paragraphs (b)(1) through (4) of this section, the employer must ensure that:

- (i) The power lines are illuminated or another means of identifying the location of the lines is used.
- (ii) A safe path of travel is identified and used.

(4) Dedicated spotter. If any part of the equipment while traveling will get closer than 20 feet to the power line, the employer shall ensure that a dedicated spotter who is in continuous contact with the driver/operator is used. The dedicated spotter shall:

- (A) Be positioned to effectively gauge the clearance distance.
- (B) Where necessary, use equipment that enables the dedicated spotter to communicate directly with the operator.
- (C) Give timely information to the operator so that the required clearance distance can be maintained.

(5) Additional precautions for traveling in poor visibility. When traveling at night, or in conditions of poor visibility, in addition to the measures specified in subsections (b)(1) through (4) of this section, the employer shall ensure that:

- (A) The power lines are illuminated or another means of identifying the location of the lines is used.
- (B) A safe path of travel is identified and used.

TABLE T—MINIMUM CLEARANCE DISTANCES WHILE TRAVELING WITH NO LOAD

Voltage
(nominal, kV, alternating current)

While traveling—minimum clearance distance (feet)

up to 0.75	4
over .75 to 50	6
over 50 to 345	10
over 345 to 750	16
Over 750 to 1,000	20
Over 1,000	

TABLE T—MINIMUM CLEARANCE DISTANCES WHILE TRAVELING WITH NO LOAD

Voltage (nominal, kV, alternating current)	While traveling— minimum clearance distance (feet)
up to 0.60	4
over .60 to 50	6
over 50 to 345	10
over 345 to 750	16
Over 750 to 1,000	20
Over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power)

Clearances below 750 Volts coordinated with CA Section 2946, Table 1, which is more protective for 600 to 750 volts.

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(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).	<u>transmission and distribution).</u>	
§ 1926.1412 Inspections. (a) Modified equipment.	<u>§5031.2. Inspection – Modifications or Additions.</u>	
(1) Equipment that has had modifications or additions which affect the safe operation of the equipment (such as modifications or additions involving a safety device or operational aid, critical part of a control system, power plant, braking system, load sustaining structural components, load hook, or in-use operating mechanism) or capacity must be inspected by a qualified person after such modifications/ additions have been completed, prior to initial use. The inspection must meet all of the following requirements:	(a) <u>Equipment that has had modifications or additions which affect the safe operation of the equipment or capacity (such as modifications or additions involving a critical part of a control system, power plant, or load sustaining structural components) shall be inspected by a certified agent after such modifications/ additions have been completed, prior to initial use.</u> (b) <u>Such modifications or additions shall meet or exceed manufacturer’s specifications and the original safety factors of the equipment shall not be reduced.</u> (c) <u>The inspection shall meet all of the following requirements:</u>	Text modified to clarify that modifications may not degrade below the manufacturer’s specs and to differentiate between modifications and maintenance. Section 5034 covers adjustments and repairs.
(i) The inspection must assure that the modifications or additions have been done in accordance with the approval obtained pursuant to § 1926.1434 (Equipment modifications).	(1) <u>The inspection shall assure that the modifications or additions have been done in accordance with the approval obtained pursuant to Section 4884.1 (Equipment Modifications).</u>	
(ii) The inspection must include functional testing of the equipment.	(2) <u>The inspection shall include functional testing of the equipment.</u> <u>EXCEPTION: These inspections may be performed by a qualified person for cranes not exceeding 3 tons rated capacity.</u>	
(2) Equipment must not be used until an inspection under this paragraph demonstrates that the requirements of paragraph (a)(1)(i) of this section have been met.		This is already required by Section 5031.2(a) and (c).
(b) Repaired/adjusted equipment.	<u>§5031.3. Repaired/adjusted equipment.</u>	
(1) Equipment that has had a repair or	<u>Equipment that has had a repair or adjustment</u>	See also Section 5020(a) and (b) and Section

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<p>adjustment that relates to safe operation (such as: A repair or adjustment to a safety device or operator aid, or to a critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in use operating mechanism), must be inspected by a qualified person after such a repair or adjustment has been completed, prior to initial use. The inspection must meet all of the following requirements:</p> <p>(i) The qualified person must determine if the repair/adjustment meets manufacturer equipment criteria (where applicable and available).</p> <p>(ii) Where manufacturer equipment criteria are unavailable or inapplicable, the qualified person must:</p> <p>(A) Determine if a registered professional engineer (RPE) is needed to develop criteria for the repair/adjustment. If an RPE is not needed, the employer must ensure that the criteria are developed by the qualified person. If an RPE is needed, the employer must ensure that they are developed by an RPE.</p> <p>(B) Determine if the repair/adjustment meets the criteria developed in accordance with paragraph (b)(1)(ii)(A) of this section.</p> <p>(iii) The inspection must include functional testing of the repaired/adjusted parts and other components that may be affected by the repair/adjustment.</p> <p>(4) Equipment must not be used until an inspection under this paragraph demonstrates that the repair/adjustment meets the requirements of paragraph (b)(1)(i) of this</p>	<p><u>that relates to safe operation (such as a repair or adjustment to a safety device or operational aid, or to a critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) shall be inspected by a qualified person after such a repair or adjustment has been completed, prior to initial use. The inspection shall meet all of the following requirements:</u></p> <p><u>(a) The qualified person shall determine if the repair/adjustment meets manufacturer equipment criteria (where applicable and available).</u></p> <p><u>(b) Where manufacturer equipment criteria are unavailable or inapplicable, the qualified person shall:</u></p> <p><u>(1) Determine if a certified agent is needed to develop criteria for the repair/adjustment. If a certified agent is not needed, the employer shall ensure that the criteria are developed by a qualified person. If a certified agent is needed, the employer shall ensure that they are developed by a certified agent.</u></p> <p><u>(2) Determine if the repair/adjustment meets the criteria developed in accordance with subsection (b)(1).</u></p> <p><u>(c) The inspection shall include functional testing of the repaired/adjusted parts and other components that may be affected by the repair/adjustment.</u></p> <p><u>(d) Equipment shall not be used until an inspection under this section demonstrates that the repair/adjustment meets the requirements of subsection (a) or (b).</u></p>	<p>5034(a) and (c)-(f) which complement these requirements.</p> <p>Note: definition of “certified agent” per Section 4885: “Certified Agent. The manufacturer, or a person who is currently registered as a professional civil, mechanical, or structural engineer by the State of California and is knowledgeable in the structure and use of the equipment.” Therefore, certified agent includes the manufacturer and/or RPE.</p>
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<p>section (or, where applicable, paragraph (b)(1)(ii) of this section).</p>		
<p>(c) Post-assembly.</p>	<p><u>§5031.1. Inspection – Post-Assembly.</u></p>	
<p>(1) Upon completion of assembly, the equipment must be inspected by a qualified person to assure that it is configured in accordance with manufacturer equipment criteria.</p>	<p><u>Upon completion of assembly, and before use, the crane shall be inspected by a qualified person to assure that it is configured in accordance with the manufacturer’s criteria.</u> <u>NOTE: Disassembly and reassembly of equipment does not require recertification of the equipment provided that the equipment is reassembled and used in a manner consistent with its certification.</u></p>	<p>The note is copied from Section 5022(a) Note 1 for consistency.</p>
<p>(2) Where manufacturer equipment criteria are unavailable, a qualified person must: (i) Determine if a registered professional engineer (RPE) familiar with the type of equipment involved is needed to develop criteria for the equipment configuration. If an RPE is not needed, the employer must ensure that the criteria are developed by the qualified person. If an RPE is needed, the employer must ensure that they are developed by an RPE. (ii) Determine if the equipment meets the criteria developed in accordance with paragraph (c)(2)(i) of this section.</p>		<p>This is considered to be an unsafe practice in CA. All cranes are to be designed, constructed and installed IAW B30 standards which include an extensive inspection checklist. If the manufacturer’s criteria cannot be obtained, the crane cannot operate.</p>
<p>(3) Equipment must not be used until an inspection under this paragraph demonstrates that the equipment is configured in accordance with the applicable criteria.</p>		<p>Covered by Section 5031.1 above.</p>
<p>(d) Each shift. (1) A competent person must begin a visual inspection prior to each shift the equipment will be used, which must be completed before or during that shift.</p>	<p><u>§5031. Inspection.</u> (a) A qualified person shall visually inspect the crane's or derrick's controls, rigging and operating mechanism prior to the first operation on any work shift. Any unsafe</p>	<p>CA requires inspection to be completed prior to first operation on any work shift. GISO Section 5031 is more protective – repairs must be made prior to use.</p>

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<p>The inspection must consist of observation for apparent deficiencies. Taking apart equipment components and booming down is not required as part of this inspection unless the results of the visual inspection or trial operation indicate that further investigation necessitating taking apart equipment components or booming down is needed.</p> <p>Determinations made in conducting the inspection must be reassessed in light of observations made during operation.</p> <p>At a minimum the inspection must include all of the following:</p>	<p>conditions disclosed by the inspection requirements of this Article shall be corrected promptly. Defective components of equipment which create an imminent safety hazard shall be replaced, repaired or adjusted prior to use.</p> <p>(b) Frequency of Inspections. Daily visual inspections by the operator or other qualified person shall be made of/for:</p>	
<p>(i) Control mechanisms for maladjustments interfering with proper operation.</p> <p>(ii) Control and drive mechanisms for apparent excessive wear of components and contamination by lubricants, water or other foreign matter.</p> <p>(iii) Air, hydraulic, and other pressurized lines for deterioration or leakage, particularly those which flex in normal operation.</p>	<p>(1) All functional mechanisms for <u>excessive wear, or maladjustments interfering with proper operation;</u></p> <p>(2) Lines, tanks, valves, pumps, and other parts of air, or hydraulic, <u>or other pressurized systems for contamination, deterioration or leakage, particularly lines which flex in normal operation;</u></p>	
<p>(iv) Hydraulic system for proper fluid level.</p>	<p>(3) <u>Hydraulic system for proper fluid level;</u></p>	
<p>(v) Hooks and latches for deformation, cracks, excessive wear, or damage such as from chemicals or heat.</p>	<p>(4) Hooks <u>and latches</u> for deformation, <u>and cracks, excessive wear, or damage;</u></p>	
	<p>(5) Hoist or load attachment chains including end connections for excessive wear, twist, distorted or stretched links interfering with proper function;</p>	
	<p>(6) Excessive wear, broken wires, stretch, kinking, or twisting of ropes and rope slings, including end connections;</p>	
<p>(vi) Wire rope reeving for compliance with the manufacturer's specifications.</p>	<p>(7) <u>Wire rope reeving for compliance with the crane manufacturer's specifications;</u></p>	

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(vii) Wire rope, in accordance with § 1926.1413(a).		Deleted – this is a circular reference.
(viii) Electrical apparatus for malfunctioning, signs of apparent excessive deterioration, dirt or moisture accumulation.	<u>(8) Electrical apparatus for malfunctioning, signs of excessive deterioration, dirt or moisture accumulation;</u>	
(ix) Tires (when in use) for proper inflation and condition.	<u>(9) Tires, when used to support the lifting operation, for proper inflation and condition;</u>	
(x) Ground conditions around the equipment for proper support, including ground settling under and around outriggers/stabilizers and supporting foundations, ground water accumulation, or similar conditions. This paragraph does not apply to the inspection of ground conditions for railroad tracks and their underlying support when the railroad tracks are part of the general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR part 213.	<u>(10) Ground conditions around the crane support system, including ground settling and ground water accumulation;</u> <u>EXCEPTION TO SUBSECTION (a)(10): This section does not apply to the inspection of ground conditions for railroad tracks and their underlying support when the railroad tracks are part of the general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR Part 213.</u>	
(xi) The equipment for level position within the tolerances specified by the equipment manufacturer's recommendations, both before each shift and after each move and setup.	<u>(11) The crane for level within the tolerances specified by the crane manufacturer's recommendations, both before each shift and after each move and setup;</u>	
(xii) Operator cab windows for significant cracks, breaks, or other deficiencies that would hamper the operator's view.	<u>(12) Operator cab windows for cracks, breaks, or other deficiencies that impair the operator's view;</u>	
(xiii) Rails, rail stops, rail clamps and supporting surfaces when the equipment has rail traveling. This paragraph does not apply to the inspection of rails, rail stops, rail clamps and supporting surfaces when the railroad tracks are part of the general railroad system of transportation that is	<u>(13) Locomotive, hammerhead tower cranes, and other specialized rail-mounted cranes in construction: Rails, rail stops, rail clamps (as applicable) and supporting surfaces when the equipment has rail traveling;</u> <u>EXCEPTION TO SUBSECTION (a)(13): This subsection does not apply to the inspection of rails, rail stops, rail clamps and supporting surfaces when the railroad tracks are part of the</u>	

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regulated pursuant to the Federal Railroad Administration under 49 CFR part 213.	<u>general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR Part 213.</u>	
(xiv) Safety devices and operational aids for proper operation.	<u>(14) Safety devices and operational aids for proper operation;</u>	
	<u>(15) The operation of all limit switches without a load on the hook.</u>	Retain existing state requirement not covered in federal. [Note: was formerly subsection (b)(2)].
<p>(2) If any deficiency in paragraphs (d)(1)(i) through (xiii) of this section (or in additional inspection items required to be checked for specific types of equipment in accordance with other sections of this standard) is identified, an immediate determination must be made by the competent person as to whether the deficiency constitutes a safety hazard. If the deficiency is determined to constitute a safety hazard, the equipment must be taken out of service until it has been corrected. See § 1926.1417.</p> <p>(3) If any deficiency in paragraph (d)(1)(xiv) of this section (safety devices/operational aids) is identified, the action specified in § 1926.1415 and § 1926.1416 must be taken prior to using the equipment.</p>	§5031(a) ... Any unsafe conditions disclosed by the inspection requirements of this Article shall be corrected promptly. Defective components of equipment which create an imminent safety hazard shall be replaced, repaired or adjusted prior to use.	Section 5031(a) requires <u>all</u> deficiencies to be corrected promptly.
(e) Monthly.	<p>§5031(c) <u>Periodic inspections.</u></p> <p><u>(1) Frequency:</u></p> <p><u>(A) Periodic inspections shall be conducted at least four times a year.</u></p> <p><u>(B) (e)(3) Cranes handling molten metal shall be inspected at least weekly when in use and necessary repairs made.</u></p> <p><u>(2) The annual certification, as required by Section 5021(a), can serve as one of the required periodic inspections. The periodic inspections shall be evenly spaced or as close to evenly spaced as scheduling permits through</u></p>	These provisions, copied from GISO Section 5031(c) are more protective than federal monthly inspections which only require documentation of daily inspections. CA requires quarterly inspection after not more than one quarter or 750 hours of operation (whichever comes first).

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	<p>the year. Cranes shall not be operated more than 750 hours, between periodic inspections.</p>	
<p>(1) Each month the equipment is in service it must be inspected in accordance with paragraph (d) of this section (each shift). (2) Equipment must not be used until an inspection under this paragraph demonstrates that no corrective action under paragraphs (d)(2) and (3) of this section is required.</p>	<p>(3) The inspection shall include the following in addition to the items in subsection (b) above: (A) (1) Excessive wear of all functional operating mechanisms. (B) (2) Ropes, brakes, friction clutches, chain drives, and other parts subject to wear which may be readily inspected.</p>	<p>These provisions, copied from GISO Section 5031(c) are more protective than federal monthly inspections which only require documentation of daily inspections. Section 5031(a) requires <u>all</u> deficiencies to be corrected promptly. Section 5031(b)(3)(A)-(B) are in addition to federal requirements.</p>
<p>(3) Documentation. (i) The following information must be documented and maintained by the employer that conducts the inspection: (A) The items checked and the results of the inspection. (B) The name and signature of the person who conducted the inspection and the date. (ii) This document must be retained for a minimum of three months.</p>	<p>(C) (4) An inspection record shall be maintained which includes <u>the items inspected and the results of the inspection</u>, the date of the inspection, the signature of the person who performed the inspection, and the serial number or other identifier of the crane inspected. The most recent inspection record shall be maintained on file.</p>	
<p>(f) Annual/comprehensive. (1) At least every 12 months the equipment must be inspected by a qualified person in accordance with paragraph (d) of this section (each shift) except that the corrective action set forth in paragraphs (f)(4), (f)(5), and (f)(6) of this section must apply in place of the corrective action required by paragraphs (d)(2) and (d)(3) of this section. (2) In addition, at least every 12 months, the equipment must be inspected by a qualified person.</p>	<p>(d) <u>Annual/comprehensive</u>. In any year in which no quadrennial (every four years) proof load test is required on cranes or derricks, such equipment shall be examined by a qualified person as described in Section 5021. Such examination shall be made not later than the anniversary date of the quadrennial certification and shall conform with the requirements of Section 5022(d), and the following:</p>	
<p>Disassembly is required, as necessary, to complete the inspection. The equipment must be inspected for all of the following:</p>	<p>§5031(d)(4) Whenever it is considered necessary by the certificating agency or authorized representative and whenever it is</p>	

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	<p>practical and advisable to avoid disassembly of equipment, removal of pins, etc., examination of structure or parts by electronic, ultrasonic, or other nondestructive methods shall be carried out.</p>	
	<p>§5022(d) An examination shall be carried out in conjunction with each proof load test. The certificating agency shall make a determination as to requirements for the correction of deficiencies found. The examination shall cover the following points as applicable:</p>	<p>Section 5022(d) is shown to give context and also to illustrate that the requirements of Section 5022(d) [referenced in Section 5031(c) above] satisfy the requirements of 1926.1412(f). Note: Section 5022(d) examinations are not limited to quadrennial load testing, [Section 5031(c) above requires <u>annual</u> compliance with Section 5022(d) (including subsections below)].</p>
<p>(i) Equipment structure (including the boom and, if equipped, the jib): (A) Structural members: Deformed, cracked, or significantly corroded. (B) Bolts, rivets and other fasteners: loose, failed or significantly corroded.</p>	<p>§5022(d) *** (6) Deformed, cracked, or excessively corroded members in crane structure and boom. (7) Loose bolts, rivets, or other connections. (8) Worn, cracked, or distorted parts affecting safe operation. *** (12) Careful examination of the junction areas of removable boom sections, particularly for proper seating, cracks, deformities, or other defects in securing bolts and in the vicinity of such bolts. ***</p>	
<p>(C) Welds for cracks.</p>	<p>§5022(d)(14) <u>Welds for cracks.</u></p>	
<p>(ii) Sheaves and drums for cracks or significant wear. (iii) Parts such as pins, bearings, shafts, gears, rollers and locking devices for distortion, cracks or significant wear.</p>	<p>§5022(d)(1) All functional operating mechanisms for improper function, maladjustment, <u>cracks, distortion, or</u> and excessive component wear, with particular attention to sheaves, pins, and drums, <u>bearings, shafts, gears, rollers, and locking devices.</u> This</p>	

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	shall include operation with partial load, in which all functions and movements, including, where applicable, maximum possible rotation in both directions, are performed.	
(iv) Brake and clutch system parts, linings, pawls and ratchets for excessive wear.	§5022(d)(9) Excessive wear on and free operation of brake and clutch system parts, linings, pawls, and ratchets.	
(v) Safety devices and operational aids for proper operation (including significant inaccuracies).	§5022(d)(2) All safety devices <u>and operational aids for malfunction proper operation (including significant inaccuracies).</u>	
(vi) Gasoline, diesel, electric, or other power plants for safety-related problems (such as leaking exhaust and emergency shut-down feature) and conditions, and proper operation. (vii) Chains and chain drive sprockets for excessive wear of sprockets and excessive chain stretch. (viii) Travel steering, brakes, and locking devices, for proper operation. (ix) Tires for damage or excessive wear.		These items covered by ASME B30.5, which is incorporated by reference in Section 4884. Compliance is checked annually per Section 5021 and documented on Section 4885, Plate V.
(x) Hydraulic, pneumatic and other pressurized hoses, fittings and tubing, as follows: (A) Flexible hose or its junction with the fittings for indications of leaks. (B) Threaded or clamped joints for leaks. (C) Outer covering of the hose for blistering, abnormal deformation or other signs of failure/ impending failure. (D) Outer surface of a hose, rigid tube, or fitting for indications of excessive abrasion or scrubbing. (xi) Hydraulic and pneumatic pumps and motors, as follows: (A) Performance indicators: Unusual noises or vibration, low operating speed, excessive	§5022(d)(3) Deterioration, <u>abnormal wear or performance</u> , or leakage in lines, tanks, valves, drains, pumps, <u>joints, fittings</u> and other parts of air or <u>pneumatic, hydraulic or other pressurized</u> systems.	Section 5022(d)(3) covers all the provisions of 1926.1412(f)(2)(x) - (xiii).

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<p>heating of the fluid, low pressure. (B) Loose bolts or fasteners. (C) Shaft seals and joints between pump sections for leaks. (xii) Hydraulic and pneumatic valves, as follows: (A) Spools: Sticking, improper return to neutral, and leaks. (B) Leaks. (C) Valve housing cracks. (D) Relief valves: Failure to reach correct pressure (if there is a manufacturer procedure for checking pressure, it must be followed). (xiii) Hydraulic and pneumatic cylinders, as follows: (A) Drifting caused by fluid leaking across the piston. (B) Rod seals and welded joints for leaks. (C) Cylinder rods for scores, nicks, or dents. (D) Case (barrel) for significant dents. (E) Rod eyes and connecting joints: Loose or deformed.</p>		
<p>(xiv) Outrigger or stabilizer pads/floats for excessive wear or cracks. (xv) Slider pads for excessive wear or cracks.</p>		<p>These items covered by ASME B30.5, which is incorporated by reference in Section 4884. Compliance is checked annually per Section 5021 and documented on Section 4885, Plate V.</p>
<p>(xvi) Electrical components and wiring for cracked or split insulation and loose or corroded terminations.</p>	<p>§5022(d)(15) <u>Electrical components and wiring for cracked or split insulation and loose or corroded terminations.</u></p>	
<p>(xvii) Warning labels and decals originally supplied with the equipment by the manufacturer or otherwise required under this standard: Missing or unreadable.</p>	<p>§5022(d)(11) It shall be ascertained that there is a durable rating chart visible to the operator, covering the complete range of the certified agent's capacity ratings at all operating radii, for all permissible boom lengths and jib length,</p>	

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	<p>with alternate ratings for optional equipment affecting such ratings. Necessary precautions or warnings shall be included and operating controls marked or an explanation of controls shall be posted at the operator's position to indicate function.</p>	
<p>(xviii) Originally equipped operator seat (or equivalent): Missing. (xix) Operator seat: Unserviceable.</p>	<p><u>§5022(d)(16) Operator seat (when applicable): Installed and serviceable.</u></p>	
<p>(xx) Originally equipped steps, ladders, handrails, guards: Missing. (xxi) Steps, ladders, handrails, guards: In unusable/unsafe condition.</p>	<p><u>§5022(d)(17) Steps, ladders, handrails, handholds, guards, where provided or required by other sections of these Orders: In usable and safe condition.</u></p>	
<p>(3) This inspection must include functional testing to determine that the equipment as configured in the inspection is functioning properly.</p>	<p>§5022(d) An examination shall be carried out in conjunction with each proof load test. The certifying agency shall make a determination as to requirements for the correction of deficiencies found. The examination shall cover the following points as applicable: (1) All functional operating mechanisms for improper function, maladjustment, <u>cracks, distortion, or and excessive component wear</u>, with particular attention to sheaves, pins, and drums, <u>bearings, shafts, gears, rollers, and locking devices</u>. This shall include operation with partial load, in which all functions and movements, including, where applicable, maximum possible rotation in both directions, are performed. (2) All safety devices <u>and operational aids for malfunction proper operation (including significant inaccuracies)</u>.</p>	<p>Section 5022(d) requires functional testing and determination as to requirements for correction of deficiencies found. Section 5022 also includes additional requirements for proof load testing not found in federal standards as follows: §5022. Proof Load Test and Examination of Cranes and Their Accessory Gear. (a) Proof load tests of cranes shall be carried out at the following intervals: (1) In the case of new cranes, before being taken into initial use and every 4 years thereafter. (2) In the case of uncertificated cranes which have been in use, at the time of initial certification and every 4 years thereafter. (3) In the case of major modifications or repairs to important structural components, before they are returned to service. (4) When certificated equipment is out of service for 6 months or more beyond the due date of a certification inspection, an</p>

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		<p>examination equivalent to an initial certification, including proof load test, shall be performed before the equipment re-enters service.</p> <p><u>EXCEPTIONS TO SUBSECTION (a) for cranes having a maximum rated capacity greater than one ton but not exceeding three tons:</u></p> <p><u>1. Prior to initial use the crane shall be tested using the criteria of subsection 5022(c). Testing shall be performed by or under the direction of a qualified person. The test reports shall be retained on file and available with each crane</u></p> <p><u>2. Quadrennial (every 4 years after initial) proof load tests are not required.</u></p> <p><u>NOTES FOR SECTION 5022(a):</u></p> <p><u>1. For General Industry: Disassembly and reassembly of equipment does not require recertification of the equipment provided that the equipment is reassembled and used in a manner consistent with its certification.</u></p> <p><u>2. Post-assembly for Cranes and Derricks in Construction: See additional requirements in Section 5031.1.</u></p> <p><u>3. Fixed and mobile tower cranes: See additional requirements in Section 344.81.</u></p> <p>***</p> <p>(c) Proof load tests shall be based on the manufacturer's load ratings for the conditions of use and shall consist of the application of a proof load as large as possible, but not exceeding 110 percent of the maximum load ratings for the boom on the crane. Proof loads shall be applied at the designed maximum and minimum boom angles or radii or as close to these as practicable and at such intermediate</p>
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		<p>radii as the certifying agency may deem necessary. Trolley equipped monorail cranes and overhead cranes shall be tested to a proof load as close as possible, but not exceeding 125 percent of the manufacturer's load rating. Monorail cranes and overhead cranes shall be tested by traversing the proof load weight the full length of the track, bridge/runway(s) and cross-overs, in all directions capable of operation, where practicable. In cases of foreign manufacture, the manufacturer's specifications shall be subject to approval by the certified agent as being equivalent to U.S. practice. The weight of all auxiliary handling devices such as, but not limited to, magnets, hooks, slings, and clamshell buckets shall be considered part of the load, except lifting devices which are designed as an integral part of the crane. Other methods of proof load testing may be substituted for the above where acceptable to the Division.</p> <p>EXCEPTION to subsection (c): If proof load testing with a load greater than 100 percent of the rated load is prohibited by the crane manufacturer, the proof load test shall be as close to the maximum load as allowed by the manufacturer for the boom on the crane.</p>
<p>(4) If any deficiency is identified, an immediate determination must be made by the qualified person as to whether the deficiency constitutes a safety hazard or, though not yet a safety hazard, needs to be monitored in the monthly inspections.</p>		<p>Conditional certification is not allowed in CA.</p>
<p>(5) If the qualified person determines that a deficiency is a safety hazard, the equipment</p>		<p>Conditional certification is not allowed in CA.</p>

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<p>must be taken out of service until it has been corrected, except when temporary alternative measures are implemented as specified in § 1926.1416(d) or § 1926.1435(e). See § 1926.1417.</p>		
<p>(6) If the qualified person determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.</p>		<p>Conditional certification is not allowed in CA.</p>
<p>(7) Documentation of annual/comprehensive inspection. The following information must be documented, maintained, and retained for a minimum of 12 months, by the employer that conducts the inspection: (i) The items checked and the results of the inspection. (ii) The name and signature of the person who conducted the inspection and the date.</p>	<p><u>§5031(d)(5) Documentation of annual/comprehensive inspection. An inspection record shall be maintained which includes the items inspected and the results of the inspection, the date of the inspection, the name and signature of the authorized certifying agent, the serial number or other identifier of the crane inspected, and other information as required by Section 4885, Plate V. Inspection records shall be maintained on file for a minimum of 48 months by the employer. The most recent inspection record shall be maintained on file. All documents produced under this section shall be available, during the applicable document retention period, to all persons who conduct inspections under this section. (See Section 5025)</u></p>	<p>Modified for clarity and consistency where CA requirements are more restrictive. 48 month record retention is required for quadrennial inspections required by Section 5022.</p>
<p>(g) Severe service. Where the severity of use/conditions is such that there is a reasonable probability of damage or excessive wear (such as loading that may have exceeded rated capacity, shock loading that may have exceeded rated capacity, prolonged exposure to a corrosive atmosphere), the employer must stop using the equipment and a qualified person</p>	<p>§5031. Inspection. (a) A qualified person shall visually inspect the crane's or derrick's controls, rigging and operating mechanism prior to the first operation on any work shift. Any unsafe conditions disclosed by the inspection requirements of this Article shall be corrected promptly. Defective components of equipment</p>	<p>California-required shift, daily and periodic inspections (not to exceed 3 months or 750 hours of operation, whichever comes first) provide the functional equivalent of severe service inspections. (AC consensus) Section 5035 describes procedures to be followed for damaged booms.</p>

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<p>must:</p> <p>(1) Inspect the equipment for structural damage to determine if the equipment can continue to be used safely.</p> <p>(2) In light of the use/conditions determine whether any items/conditions listed in paragraph (f) of this section need to be inspected; if so, the qualified person must inspect those items/conditions.</p> <p>(3) If a deficiency is found, the employer must follow the requirements in paragraphs (f)(4) through (6) of this section.</p>	<p>which create an imminent safety hazard shall be replaced, repaired or adjusted prior to use.</p> <p>***</p> <p>§5035. Damaged Booms.</p> <p>(a) Prior to further use, boom sections or boom suspension components that have been damaged shall be repaired, restoring them to not less than the capacity of the original section or components.</p> <p>(b) Repairs to critically stressed members of a boom or boom extension, such as a boom chord, mast chord, or boom sections, shall be performed in accordance with the manufacturers' or certified agent's recommendations.</p>	
<p>(h) Equipment not in regular use. Equipment that has been idle for 3 months or more must be inspected by a qualified person in accordance with the requirements of paragraph (e) (Monthly) of this section before initial use.</p> <p>(i) [Reserved.]</p>	<p>§5031(g). <u>Equipment that has been idle for 3 months or more shall be inspected by a qualified person in accordance with the requirements of subsection (c) (Periodic inspections) before initial use.</u></p>	
<p>(j) Any part of a manufacturer's procedures regarding inspections that relate to safe operation (such as to a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in use operating mechanism) that is more comprehensive or has a more frequent schedule of inspection than the requirements of this section must be followed.</p>	<p>§5031(e) <u>Any part of a manufacturer's procedures regarding inspections that relate to safe operation (such as to a safety device or operational aid, critical part of a control system, power plant, braking system, load-sustaining structural components, load hook, or in-use operating mechanism) that is more comprehensive or has a more frequent schedule of inspection than the requirements of this section shall be followed.</u></p>	
<p>(k) All documents produced under this section must be available, during the applicable document retention period, to all persons who conduct inspections under this section.</p>	<p>§5031. Inspection.</p> <p>***</p> <p><u>(d)(5) Documentation of annual/comprehensive inspection. An</u></p>	

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	<p><u>inspection record shall be maintained which includes the items inspected and the results of the inspection, the date of the inspection, the name and signature of the authorized certificating agent, the serial number or other identifier of the crane inspected, and other information as required by Section 4885, Plate V. Inspection records shall be maintained on file for a minimum of 48 months by the employer. The most recent inspection record shall be maintained on file. All documents produced under this section shall be available, during the applicable document retention period, to all persons who conduct inspections under this section. (See Section 5025).</u></p>	
<p>§ 1926.1413 Wire rope—inspection.</p>		
<p>(a) Shift inspection. (1) A competent person must begin a visual inspection prior to each shift the equipment is used, which must be completed before or during that shift. The inspection must consist of observation of wire ropes (running and standing) that are likely to be in use during the shift for apparent deficiencies, including those listed in paragraph (a)(2) of this section. Untwisting (opening) of wire rope or booming down is not required as part of this inspection.</p>	<p>§5031(a) A qualified person shall visually inspect the crane's or derrick's controls, rigging and operating mechanism prior to the first operation on any work shift. Any unsafe conditions disclosed by the inspection requirements of this Article shall be corrected promptly. Defective components of equipment which create an imminent safety hazard shall be replaced, repaired or adjusted prior to use. (b) Frequency of Inspections. Daily visual inspections by the operator or other qualified person shall be made of/for: *** (6) Excessive wear, broken wires, stretch, kinking, or twisting of ropes and rope slings, including end connections; <u>(7) Wire rope reeving for compliance with the crane manufacturer's specifications;</u></p>	<p>CA standard requires the inspection to be completed <u>prior</u> to the first operation of any work shift.</p>
	<p><u>§5036. Inspection – Wire Rope (Additional</u></p>	

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	<u>Requirements for Cranes and Derricks in Construction).</u>	
<p>(2) Apparent deficiencies. (i) Category I. Apparent deficiencies in this category include the following: (A) Significant distortion of the wire rope structure such as kinking, crushing, unstranding, birdcaging, signs of core failure or steel core protrusion between the outer strands. (B) Significant corrosion. (C) Electric arc damage (from a source other than power lines) or heat damage. (D) Improperly applied end connections. (E) Significantly corroded, cracked, bent, or worn end connections (such as from severe service).</p>	<p><u>(a) Apparent deficiencies.</u> <u>(1) Category I. Apparent deficiencies in this category include the following:</u> <u>(A) Significant distortion of the wire rope structure such as kinking, crushing, unstranding, birdcaging, signs of core failure or steel core protrusion between the outer strands.</u> <u>(B) Significant corrosion.</u> <u>(C) Electric arc damage (from a source other than power lines) or heat damage.</u> <u>(D) Improperly applied end connections.</u> <u>(E) Significantly corroded, cracked, bent, or worn end connections (such as from severe service).</u></p>	<p>CA Section 5031(d) requires immediate replacement for Category I conditions.</p>
<p>(ii) Category II. Apparent deficiencies in this category are: (A) Visible broken wires, as follows: (1) In running wire ropes: Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay, where a rope lay is the length along the rope in which one strand makes a complete revolution around the rope.</p>	<p><u>(2) Category II. Apparent deficiencies in this category are:</u> <u>(A) Visible broken wires, as follows:</u> <u>1. In running wire ropes: Six randomly distributed broken wires in one rope lay or three broken wires in one strand in one rope lay.</u></p>	<p>“Lay” is defined in Section 4885. CA Section 5031(d) requires immediate replacement for Category II conditions.</p>
<p>(2) In rotation resistant ropes: Two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope diameters.</p>	<p><u>2. In rotation resistant ropes: Two randomly distributed broken wires in six rope diameters or four randomly distributed broken wires in 30 rope diameters.</u></p>	
<p>(3) In pendants or standing wire ropes: More than two broken wires in one rope lay located in rope beyond end connections and/or more than one broken wire in a rope lay located at an end connection.</p>	<p><u>3. In pendants or standing wire ropes: More than two broken wires in one rope lay located in rope beyond end connections and/or more than one broken wire in a rope lay located at an end connection.</u></p>	
<p>(B) A diameter reduction of more than 5% from</p>	<p><u>(B) A diameter reduction of more than 5%</u></p>	

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nominal diameter.	<u>from nominal diameter.</u>	
(iii) Category III. Apparent deficiencies in this category include the following: (A) In rotation resistant wire rope, core protrusion or other distortion indicating core failure. (B) Prior electrical contact with a power line. (C) A broken strand.	<u>(3) Category III. Apparent deficiencies in this category include the following:</u> <u>(A) In rotation resistant wire rope, core protrusion or other distortion indicating core failure.</u> <u>(B) Prior electrical contact with a power line.</u> <u>(C) A broken strand.</u>	
(3) Critical review items. The competent person must give particular attention to all of the following: (i) Rotation resistant wire rope in use. (ii) Wire rope being used for boom hoists and luffing hoists, particularly at reverse bends. (iii) Wire rope at flange points, crossover points and repetitive pickup points on drums. (iv) Wire rope at or near terminal ends. (v) Wire rope in contact with saddles, equalizer sheaves or other sheaves where rope travel is limited.	<u>(b) Critical review items. The inspector shall give particular attention to all of the following:</u> <u>(1) Rotation resistant wire rope in use.</u> <u>(2) Wire rope being used for boom hoists and luffing hoists, particularly at reverse bends.</u> <u>(3) Wire rope at flange points, crossover points and repetitive pickup points on drums.</u> <u>(4) Wire rope at or near terminal ends.</u> <u>(5) Wire rope in contact with saddles, equalizer sheaves or other sheaves where rope travel is limited.</u>	
(4) Removal from service. (i) If a deficiency in Category I (see paragraph (a)(2)(i) of this section) is identified, an immediate determination must be made by the competent person as to whether the deficiency constitutes a safety hazard. If the deficiency is determined to constitute a safety hazard, operations involving use of the wire rope in question must be prohibited until: (A) The wire rope is replaced (see § 1926.1417), or (B) If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used.	<u>(c) Removal from service.</u> <u>(1) If a deficiency in Category I is identified, operations involving use of the wire rope in question shall be prohibited until:</u> <u>(A) The wire rope is replaced, or</u> <u>(B) If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used.</u>	See subsection (f) re: splicing and wraps remaining on the drum.
Joining lengths of wire rope by splicing is	<u>(f) Joining lengths of wire rope by splicing is</u>	

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<p>prohibited. If a rope is shortened under this paragraph, the employer must ensure that the drum will still have two wraps of wire when the load and/or boom is in its lowest position.</p>	<p><u>prohibited. If a rope is shortened by severing the wire rope in two, the employer shall ensure that the drum will still have two wraps of wire when the load and/or boom is in its lowest position.</u></p>	
<p>(ii) If a deficiency in Category II (see paragraph (a)(2)(ii) of this section) is identified, operations involving use of the wire rope in question must be prohibited until: (A) The employer complies with the wire rope manufacturer’s established criterion for removal from service or a different criterion that the wire rope manufacturer has approved in writing for that specific wire rope (see § 1926.1417), (B) The wire rope is replaced (see § 1926.1417), or (C) If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used. Joining lengths of wire rope by splicing is prohibited. If a rope is shortened under this paragraph, the employer must ensure that the drum will still have two wraps of wire when the load and/or boom is in its lowest position.</p>	<p><u>(2) If a deficiency in Category II is identified, operations involving use of the wire rope in question shall be prohibited until:</u> <u>(A) The employer complies with the wire rope manufacturer’s established criterion for removal from service or a different criterion that the wire rope manufacturer has approved in writing for that specific wire rope,</u> <u>(B) The wire rope is replaced, or</u> <u>(C) If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used.</u></p>	<p>See subsection (f) re: splicing and wraps remaining on the drum.</p>
<p>(iii) If a deficiency in Category III is identified, operations involving use of the wire rope in question must be prohibited until: (A) The wire rope is replaced (see § 1926.1417), or (B) If the deficiency (other than power line contact) is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used. Joining lengths of wire rope by splicing is prohibited. Repair of wire rope that contacted</p>	<p><u>(3) If a deficiency in Category III is identified, operations involving use of the wire rope in question shall be prohibited until:</u> <u>(A) The wire rope is replaced, or</u> <u>(B) If the deficiency (other than power line contact) is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used.</u> <u>Repair of wire rope that contacted an energized power line is prohibited.</u></p>	<p>See subsection (f) re: splicing and wraps remaining on the drum.</p>

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<p>an energized power line is also prohibited. If a rope is shortened under this paragraph, the employer must ensure that the drum will still have two wraps of wire when the load and/or boom is in its lowest position.</p>		
<p>(iv) Where a wire rope is required to be removed from service under this section, either the equipment (as a whole) or the hoist with that wire rope must be tagged-out, in accordance with § 1926.1417(f)(1), until the wire rope is repaired or replaced.</p>	<p><u>(4) Where a wire rope is required to be removed from service under this section, either the equipment (as a whole) or the hoist with that wire rope shall be tagged-out, in accordance with subsection 5008.1(e)(1), until the wire rope is repaired or replaced.</u></p>	
<p>(b) Monthly inspection. (1) Each month an inspection must be conducted in accordance with paragraph (a) (shift inspection) of this section.</p>	<p><u>(d) Periodic inspection. (1) Periodic inspections shall be conducted in accordance with subsection 5031(c).</u></p>	
<p>(2) The inspection must include any deficiencies that the qualified person who conducts the annual inspection determines under paragraph (c)(3)(ii) of this section must be monitored.</p>	<p><u>(2) The inspection shall include any deficiencies that the certifying agency that conducts the annual inspection determines under subsection (e)(3)(B) shall be monitored.</u></p>	
<p>(3) Wire ropes on equipment must not be used until an inspection under this paragraph demonstrates that no corrective action under paragraph (a)(4) of this section is required.</p>	<p><u>(3) Wire ropes on equipment shall not be used until an inspection under this section demonstrates that no corrective action under subsection (c) is required.</u></p>	
<p>(4) The inspection must be documented according to § 1926.1412(e)(3) (monthly inspection documentation).</p>	<p><u>(4) The inspection shall be documented according to subsection 5031(c)(3)(C).</u></p>	
<p>(c) Annual/comprehensive. (1) At least every 12 months, wire ropes in use on equipment must be inspected by a qualified person in accordance with paragraph (a) of this section (shift inspection).</p>	<p><u>(e) Annual/comprehensive. (1) At least every 12 months, wire ropes in use on equipment shall be inspected by a qualified person as described in Section 5021 and in accordance with subsection 5031(c).</u></p>	
<p>(2) In addition, at least every 12 months, the wire ropes in use on equipment must be inspected by a qualified person, as follows:</p>	<p><u>(2) In addition, the wire ropes shall be inspected as follows: (A) The inspection shall be for deficiencies of</u></p>	

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<p>(i) The inspection must be for deficiencies of the types listed in paragraph (a)(2) of this section.</p>	<p><u>the types listed in subsection 5036(a).</u></p>	
<p>(ii) The inspection must be complete and thorough, covering the surface of the entire length of the wire ropes, with particular attention given to all of the following: (A) Critical review items listed in paragraph (a)(3) of this section. (B) Those sections that are normally hidden during shift and monthly inspections. (C) Wire rope subject to reverse bends. (D) Wire rope passing over sheaves.</p>	<p><u>(B) The inspection shall be complete and thorough, covering the surface of the entire length of the wire ropes, with particular attention given to all of the following:</u> <u>1. Critical review items listed in subsection (b).</u> <u>2. Those sections that are normally hidden during shift and periodic inspections.</u> <u>3. Wire rope subject to reverse bends.</u> <u>4. Wire rope passing over sheaves.</u></p>	
<p>(iii) Exception: In the event an inspection under paragraph (c)(2) of this section is not feasible due to existing set-up and configuration of the equipment (such as where an assist crane is needed) or due to site conditions (such as a dense urban setting), such inspections must be conducted as soon as it becomes feasible, but no longer than an additional 6 months for running ropes and, for standing ropes, at the time of disassembly.</p>	<p><u>EXCEPTION: In the event an inspection under subsection (e)(2) is not feasible due to existing set-up and configuration of the equipment (such as where an assist crane is needed) or due to site conditions (such as a dense urban setting), such inspections shall be conducted as soon as it becomes feasible, but no longer than an additional 6 months for running ropes and, for standing ropes, at the time of disassembly.</u></p>	
<p>(3) If a deficiency is identified, an immediate determination must be made by the qualified person as to whether the deficiency constitutes a safety hazard.</p>	<p><u>(3) If a deficiency is identified, an immediate determination shall be made by the certifying agency as to whether the deficiency constitutes a safety hazard.</u></p>	
<p>(i) If the deficiency is determined to constitute a safety hazard, operations involving use of the wire rope in question must be prohibited until: (A) The wire rope is replaced (see § 1926.1417), or (B) If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used.</p>	<p><u>(A) If the deficiency is determined to constitute a safety hazard, operations involving use of the wire rope in question shall be prohibited until:</u> <u>1. The wire rope is replaced, or</u> <u>2. If the deficiency is localized, the problem is corrected by severing the wire rope in two; the undamaged portion may continue to be used.</u></p>	<p>See subsection (f) re: splicing and wraps remaining on the drum.</p>

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<p>Joining lengths of wire rope by splicing is prohibited. If a rope is shortened under this paragraph, the employer must ensure that the drum will still have two wraps of wire when the load and/or boom is in its lowest position.</p>		
<p>(ii) If the qualified person determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer must ensure that the deficiency is checked in the monthly inspections.</p>	<p><u>(B) If the certifying agency determines that, though not presently a safety hazard, the deficiency needs to be monitored, the employer shall ensure that the deficiency is checked in the periodic inspections.</u></p>	
<p>(4) The inspection must be documented according to § 1926.1412(f)(7) (annual/comprehensive inspection documentation).</p>	<p><u>(4) The inspection shall be documented according to subsection 5031(d)(5) (documentation of annual/comprehensive inspection).</u></p>	
<p>(d) Rope lubricants that are of the type that hinder inspection must not be used.</p>	<p><u>(g) Rope lubricants that are of the type that hinder inspection shall not be used.</u></p>	
<p>(e) All documents produced under this section must be available, during the applicable document retention period, to all persons who conduct inspections under this section.</p>	<p><u>(h) All documents produced under this section shall be available, during the applicable document retention period, to all persons who conduct inspections under this section.</u></p>	
<p>§ 1926.1414 Wire rope—selection and installation criteria.</p>	<p><u>§5037. Wire Rope—Selection and Installation Criteria.</u></p>	
<p>(a) Original equipment wire rope and replacement wire rope must be selected and installed in accordance with the requirements of this section. Selection of replacement wire rope must be in accordance with the recommendations of the wire rope manufacturer, the equipment manufacturer, or a qualified person.</p>	<p><u>(a) Selection of replacement wire rope shall be in accordance with the recommendations of the crane manufacturer or a qualified person.</u></p>	<p>Selection of original equipment wire rope is done by the manufacturer and is also covered in Section 4884, Standards Incorporated by Reference. Use of “qualified person” rather than “wire rope manufacturer” is to limit selection of wire rope by distributors who may or may not be qualified.</p>
<p>(b) Wire rope design criteria: Wire rope (other than rotation resistant rope) must comply with either Option (1) or Option (2) of this section, as follows:</p>		<p>Wire rope design criteria is covered by Section 4884, Standards Incorporated by Reference.</p>

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<p>(1) Option (1). Wire rope must comply with section 5–1.7.1 of ASME B30.5–2004 (incorporated by reference, see § 1926.6) except that section’s paragraph (c) must not apply.</p> <p>(2) Option (2). Wire rope must be designed to have, in relation to the equipment’s rated capacity, a sufficient minimum breaking force and design factor so that compliance with the applicable inspection provisions in § 1926.1413 will be an effective means of preventing sudden rope failure.</p>		
<p>(c) Wire rope must be compatible with the safe functioning of the equipment.</p>	<p><u>(b) Wire rope shall be compatible with the safe functioning of the equipment.</u></p>	
<p>(d) Boom hoist reeving.</p> <p>(1) Fiber core ropes must not be used for boom hoist reeving, except for derricks.</p> <p>(2) Rotation resistant ropes must be used for boom hoist reeving only where the requirements of paragraph (e)(4)(ii) of this section are met.</p>		<p>Boom hoist reeving covered by Section 4884, Standards Incorporated by Reference.</p>
<p>(e) Rotation resistant ropes.</p> <p>(1) Definitions.</p> <p>(i) Type I rotation resistant wire rope (“Type I”). Type I rotation resistant rope is stranded rope constructed to have little or no tendency to rotate or, if guided, transmits little or no torque. It has at least 15 outer strands and comprises an assembly of at least three layers of strands laid helically over a center in two operations. The direction of lay of the outer strands is opposite to that of the underlying layer.</p>	<p><u>(c) Rotation resistant ropes. Rotation resistant ropes shall not be used for boom hoist reeving, except where the requirements of the crane manufacturer state otherwise.</u></p>	<p>Rotation resistant ropes covered by Section 4884, Standards Incorporated by Reference. Requirements overlap and, in some cases, conflict with referenced standards in Section 4884. Furthermore, these criteria could conflict with the crane manufacturer’s criteria in subsection (a).</p>
<p>(ii) Type II rotation resistant wire rope (“Type II”). Type II rotation resistant rope is stranded rope constructed to have significant resistance to rotation. It has at least 10 outer strands and comprises an assembly of two or more layers of</p>		<p>Ditto above.</p>

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<p>strands laid helically over a center in two or three operations. The direction of lay of the outer strands is opposite to that of the underlying layer.</p>		
<p>(iii) Type III rotation resistant wire rope (“Type III”). Type III rotation resistant rope is stranded rope constructed to have limited resistance to rotation. It has no more than nine outer strands, and comprises an assembly of two layers of strands laid helically over a center in two operations. The direction of lay of the outer strands is opposite to that of the underlying layer.</p>		<p>Ditto above.</p>
<p>(2) Requirements. (i) Types II and III with an operating design factor of less than 5 must not be used for duty cycle or repetitive lifts. (ii) Rotation resistant ropes (including Types I, II and III) must have an operating design factor of no less than 3.5. (iii) Type I must have an operating design factor of no less than 5, except where the wire rope manufacturer and the equipment manufacturer approves the design factor, in writing. (iv) Types II and III must have an operating design factor of no less than 5, except where the requirements of paragraph (e)(3) of this section are met.</p>		<p>Ditto above.</p>
<p>(3) When Types II and III with an operating design factor of less than 5 are used (for non-duty cycle, non-repetitive lifts), the following requirements must be met for each lifting operation: (i) A qualified person must inspect the rope in accordance with § 1926.1413(a). The rope must</p>		<p>Ditto above.</p>

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<p>be used only if the qualified person determines that there are no deficiencies constituting a hazard. In making this determination, more than one broken wire in any one rope lay must be considered a hazard.</p> <p>(ii) Operations must be conducted in such a manner and at such speeds as to minimize dynamic effects.</p> <p>(iii) Each lift made under § 1926.1414(e)(3) must be recorded in the monthly and annual inspection documents. Such prior uses must be considered by the qualified person in determining whether to use the rope again.</p>		
<p>(4) Additional requirements for rotation resistant ropes for boom hoist reeving.</p> <p>(i) Rotation resistant ropes must not be used for boom hoist reeving, except where the requirements of paragraph (e)(4)(ii) of this section are met.</p>	<p><u>(c) Rotation resistant ropes. Rotation resistant ropes shall not be used for boom hoist reeving, except where the requirements of the crane manufacturer state otherwise.</u></p>	<p>Ditto above.</p>
<p>(ii) Rotation resistant ropes may be used as boom hoist reeving when load hoists are used as boom hoists for attachments such as luffing attachments or boom and mast attachment systems. Under these conditions, all of the following requirements must be met:</p> <p>(A) The drum must provide a first layer rope pitch diameter of not less than 18 times the nominal diameter of the rope used.</p> <p>(B) The requirements in § 1926.1426(a) (irrespective of the date of manufacture of the equipment), and § 1926.1426(b).</p> <p>(C) The requirements in ASME B30.5–2004 sections 5–1.3.2(a), (a)(2) through (a)(4), (b) and (d) (incorporated by reference, see § 1926.6) except that the minimum pitch diameter</p>		<p>See (c) above. These are design requirements, which are covered under Section 4884, Standards Incorporated by Reference.</p>

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<p>for sheaves used in multiple rope reeving is 18 times the nominal diameter of the rope used (instead of the value of 16 specified in section 5-1.3.2(d)). (D) All sheaves used in the boom hoist reeving system must have a rope pitch diameter of not less than 18 times the nominal diameter of the rope used. (E) The operating design factor for the boom hoist reeving system must be not less than five. (F) The operating design factor for these ropes must be the total minimum breaking force of all parts of rope in the system divided by the load imposed on the rope system when supporting the static weights of the structure and the load within the equipment's rated capacity. (G) When provided, a power controlled lowering system must be capable of handling rated capacities and speeds as specified by the manufacturer.</p>		
<p>(f) Wire rope clips used in conjunction with wedge sockets must be attached to the unloaded dead end of the rope only, except that the use of devices specifically designed for dead-ending rope in a wedge socket is permitted. (g) Socketing must be done in the manner specified by the manufacturer of the wire rope or fitting.</p>	<p><u>(d) End terminations on wire rope shall be installed in accordance with the termination or rope manufacturer's specification.</u></p>	
<p>(h) Prior to cutting a wire rope, seizings must be placed on each side of the point to be cut. The length and number of seizings must be in accordance with the wire rope manufacturer's instructions.</p>		<p>Covered by (d) above.</p>
<p>§ 1926.1415 Safety devices.</p>	<p><u>§5017. Safety Devices.</u></p>	
<p>(a) Safety devices. The following safety devices</p>	<p><u>(a) Safety devices. The following safety</u></p>	

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<p>are required on all equipment covered by this subpart, unless otherwise specified:</p>	<p><u>devices are required on all equipment covered by Group 13, as applicable, unless otherwise specified:</u> <u>NOTE: See Section 4968 for tower cranes.</u></p>	
<p>(1) Crane level indicator. (i) The equipment must have a crane level indicator that is either built into the equipment or is available on the equipment. (ii) If a built-in crane level indicator is not working properly, it must be tagged-out or removed. If a removable crane level indicator is not working properly, it must be removed. (iii) This requirement does not apply to portal cranes, derricks, floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation.</p>	<p><u>(1) Crane level indicator.</u> <u>(A) The equipment shall have a crane level indicator that is either built into the equipment or is available on the equipment. [See Section 4924(e)]</u> <u>(B) If a built-in crane level indicator is not working properly, it shall be tagged-out or removed. If a removable crane level indicator is not working properly, it shall be removed.</u> <u>EXCEPTION: This requirement does not apply to portal cranes and derricks.</u></p>	<p>Exception modified: level indicators should be provided on floating cranes, barges, etc.</p>
<p>(2) Boom stops, except for derricks and hydraulic booms. (3) Jib stops (if a jib is attached), except for derricks.</p>	<p><u>(2) Boom stops, except for derricks and hydraulic booms. [See Section 4922]</u> <u>(3) Jib stops (if a jib is attached), except for derricks. [See Section 4922]</u></p>	<p>§4922. Crane Boomstops. (a) Cranes of such design that the boom could fall over backward shall be equipped with boomstops whenever the main boom is rope supported and the crane used for hook, clamshell, magnet, grapple, concrete bucket, or service presenting similar risk. The boomstop shall provide emergency protection against destructive damage and related hazard by opposing any unexpected upward and rearward boom movement beyond the working range. It shall not be used purposely as a substitute for normal procedures in stopping a boom being raised. (b) In the case of new cranes over 10 tons in capacity purchased after January 1, 1971, the required boomstops shall satisfy the following standards and each involved employer shall have substantial assurance of this in the form of</p>

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		<p>crane manufacturers' warranties, test reports, charts, engineering calculations, etc.</p> <p>(1) The boomstops shall be strong enough to develop the ultimate strength of the boom in bending at the point of attachment or contact between boomstop and boom, which point should be located near the outer end of the basic inner section of the boom; however, the point must be at least 5 feet above the operator's normal seat level when the crane is level and the boom vertical.</p> <p>(2) The ultimate bending strength of the boom referred to in (1) shall not be reduced by the nature of contact between the boomstop and boom; such points of contact to be so located and designed that forces developed by boomstop action on the boom will not cause prior local failure of any boom members.</p> <p>(3) The boomstop shall prevent that portion of the boom below the point of boomstop contact from upward and rearward movement beyond 90 degrees, or some lesser angle, in reference to the horizontal machinery deck.</p> <p>(4) The boomstop shall provide energy absorbing resistance to the upward and rearward movement of the boom throughout an angular range of the last 5 degrees of such movement as limited in (3).</p> <p>(c) Jibs shall have positive stops to prevent their movement of more than 5 degrees beyond the straight line of the jib and boom on conventional-type crane booms.</p> <p>(d) No boomstop shall remain in use unless it is in good operating condition and maintained in accordance with the certified agent's guidelines</p>
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		for maintenance and service.
(4) Equipment with foot pedal brakes must have locks.	<u>(4) Equipment with foot pedal brakes shall have locks.</u>	
(5) Hydraulic outrigger jacks and hydraulic stabilizer jacks must have an integral holding device/check valve.	<u>(5) Hydraulic outrigger jacks and hydraulic stabilizer jacks shall have an integral holding device/check valve.</u>	
(6) Equipment on rails must have rail clamps and rail stops, except for portal cranes.	<u>(6) Equipment on rails, except for portal cranes, shall have rail clamps and rail stops. [See Article 92]</u>	See Article 92, Sections 4903-4905.
(7) Horn (i) The equipment must have a horn that is either built into the equipment or is on the equipment and immediately available to the operator.	<u>(7) The equipment shall have a horn that is either built into the equipment or is on the equipment and immediately available to the operator.</u>	Note: Section 4936 (warning devices) applies only to mobile cranes. By virtue of this location (Section 5017), this will apply to all cranes.
(ii) If a built-in horn is not working properly, it must be tagged-out or removed. If a removable horn is not working properly, it must be removed.		This conflicts with subsection (b) below.
	<u>(8) Anti-two-blocking device.</u> <u>(A) Telescopic boom cranes. [See Section 4924(d)(1)]</u> <u>(B) Lattice boom cranes. [See Section 4924(d)(2) and (d)(3)]</u> <u>(C) Articulating boom cranes. [See Section 4924(d)(4)]</u> <u>(9) Boom angle or radius indicator. The equipment shall have a boom angle or radius indicator readable from the operator's station. [See Section 4924(c)]</u> <u>EXCEPTION: Boom angle or radius indicator not applicable to articulating cranes.</u> <u>(10) A jib angle indicator shall be provided if the equipment has a luffing jib. [See Section 4924(c)]</u> <u>(11) Load weighing and similar devices. [See</u>	Subsections (a)(8)-(a)(13) are federal operational aids reclassified to "safety devices" per Advisory Committee input.

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	<p><u>Section 4924(b)]</u> <u>(12) Boom hoist limiting device. For equipment manufactured after December 16, 1969, a boom hoist limiting device is required.</u> <u>(13) Luffing jib limiting device. Equipment with a luffing jib shall have a luffing jib limiting device.</u></p>	
<p>(b) Proper operation required. Operations must not begin unless all of the devices listed in this section are in proper working order. If a device stops working properly during operations, the operator must safely stop operations. If any of the devices listed in this section are not in proper working order, the equipment must be taken out of service and operations must not resume until the device is again working properly. See § 1926.1417 (Operation). Alternative measures are not permitted to be used.</p>	<p><u>(b) Proper operation required.</u> <u>Operations shall not begin unless all of the safety devices listed in this section are in proper working order. If a required safety device stops working properly during operations, the operation shall be safely stopped. If any device listed in this section is not in proper working order, the equipment shall be taken out of service and operations shall not resume until the device is again working properly. See Section 5008.1 (Operation). Alternative measures are not permitted to be used.</u></p>	
	<p><u>EXCEPTIONS to SUBSECTION (b):</u> <u>1. For subsections (a)(9) and (a)(10), see Section 4924(c).</u> <u>2. For subsection (a)(11), see Section 4924(b).</u></p>	<p>There is no federal counterpart language.</p>
<p>§ 1926.1416 Operational aids.</p>	<p><u>§5018. Operational Aids.</u></p>	
<p>(a) The devices listed in this section (“listed operational aids”) are required on all equipment covered by this subpart, unless otherwise specified.</p>	<p><u>(a) The devices listed in this section (“listed operational aids”) are required on all mobile cranes and derricks covered by Group 13, as applicable, unless otherwise specified.</u> <u>NOTE: See Section 4968.2 for tower cranes.</u></p>	<p>By virtue of being in Article 98.1, this would apply to all crane types. “As applicable” will limit to application as appropriate.</p>
<p>(1) The requirements in paragraphs (e)(1), (e)(2), and (e)(3) of this section do not apply to articulating cranes.</p>		<p>Fed paragraphs (e)(1), (e)(2), and (e)(3) correspond to state Sections 5017(a)(9), 5017(a)(10) and 5018(d)(1) respectively.</p> <ul style="list-style-type: none"> ▪ See exception in 5017(a)(9) for articulating

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		<p>cranes.</p> <ul style="list-style-type: none"> ▪ 5017(a)(10) is for luffing jibs; therefore N/A for articulating cranes. ▪ 5018(d)(1) is only applicable to telescopic booms, therefore N/A for articulating cranes.
<p>(2) The requirements in paragraphs (d)(3), (e)(1), and (e)(4) of this section apply only to those digger derricks manufactured after November 8, 2011.</p>		<p>Fed paragraphs (d)(3), (e)(1), and (e)(4) correspond to state Sections 5017(a)(8), 5017(a)(9) and 5017(a)(11) respectively.</p> <ul style="list-style-type: none"> ▪ 5017(a)(8) is cross-referenced to Section 4924(d)(1) and (d)(2) which is more protective for anti-two-blocking requirements. ▪ 5017(a)(9): Fed exception for digger derricks is less protective than state Section 4924(c) ▪ 5017(a)(11), by virtue of its scope, does not apply to digger derricks.
<p>(b) Operations must not begin unless the listed operational aids are in proper working order, except where an operational aid is being repaired the employer uses the specified temporary alternative measures. The time periods permitted for repairing defective operational aids are specified in paragraphs (d) and (e) of this section. More protective alternative measures specified by the crane/derrick manufacturer, if any, must be followed.</p>	<p><u>(b) Operations shall not begin unless the listed operational aids, as applicable, are in proper working order.</u> <u>EXCEPTION: Where an operational aid is being repaired the employer shall use the specified temporary alternative measures; however, more protective alternative measures specified by the crane/derrick manufacturer, if any, shall be followed.</u></p>	<p>This is more protective and is consistent with current practice in CA.</p>
<p>(c) If a listed operational aid stops working properly during operations, the operator must safely stop operations until the temporary alternative measures are implemented or the device is again working properly. If a replacement part is no longer available, the use of a substitute device that performs the same</p>	<p><u>(c) If a listed operational aid stops working properly during operations, the operator shall safely stop operations until the device is repaired, or the device is again working properly. Any replacement part or device utilized shall perform the same type function as permitted subject to the provisions of Section</u></p>	<p>Modified to be consistent with subsection (b).</p>

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<p>type of function is permitted and is not considered a modification under § 1926.1434.</p>	<p><u>4884.1.</u> <u>(1) Where an operational aid is being repaired the employer shall use the specified temporary alternative measures; however, more protective alternative measures specified by the crane/ derrick manufacturer, if any, shall be followed.</u></p>	
<p>(d) Category I operational aids and alternative measures. Operational aids listed in this paragraph that are not working properly must be repaired no later than 7 calendar days after the deficiency occurs. Exception: If the employer documents that it has ordered the necessary parts within 7 calendar days of the occurrence of the deficiency, the repair must be completed within 7 calendar days of receipt of the parts. See § 1926.1417(j) for additional requirements.</p>	<p><u>(d) Operational aids and alternative measures. Operational aids listed in this section that are not working properly shall be repaired no later than 7 calendar days after the deficiency occurs subject to the provisions of subsection (c). See Section 5008.1(g) for additional requirements.</u></p>	<p>Fed exception not permitted.</p>
<p>(1) Boom hoist limiting device. (i) For equipment manufactured after December 16, 1969, a boom hoist limiting device is required. Temporary alternative measures (use at least one). One or more of the following methods must be used: (A) Use a boom angle indicator. (B) Clearly mark the boom hoist cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to keep the boom within the minimum allowable radius. In addition, install mirrors or remote video cameras and displays if necessary for the operator to see the mark. (C) Clearly mark the boom hoist cable (so that it can easily be seen by a spotter) at a point that will give the spotter sufficient time to signal the operator and have the operator stop the hoist to keep the boom within the minimum allowable</p>	<p><u>§5017(a)(12) Boom hoist limiting device. For equipment manufactured after December 16, 1969, a boom hoist limiting device is required.</u></p>	<p>Fed verbiage modified for clarity. Reclassified as a safety device by 10/18/15 AC. Temporary alternative measures not permitted.</p>

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<p>radius. (ii) If the equipment was manufactured on or before December 16, 1969, and is not equipped with a boom hoist limiting device, at least one of the measures in paragraphs (d)(1)(i)(A) through (C) of this section must be used.</p>		
<p>(2) Luffing jib limiting device. Equipment with a luffing jib must have a luffing jib limiting device. Temporary alternative measures are the same as in paragraph (d)(1)(i) of this section, except to limit the movement of the luffing jib rather than the boom hoist.</p>	<p><u>§5017(a)(13) Luffing jib limiting device. Equipment with a luffing jib shall have a luffing jib limiting device.</u></p>	<p>Reclassified as a safety device by 10/8/15 AC.</p>
<p>(3) Anti two-blocking device. (i) Telescopic boom cranes manufactured after February 28, 1992, must be equipped with a device which automatically prevents damage from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device(s) must prevent such damage at all points where two-blocking could occur.</p>	<p><u>§5017(a)(8) Anti-two-blocking device. (A) Telescopic boom cranes. [See Section 4924(d)(1)]</u></p>	<p>Anti-two blocking devices are safety devices in California; therefore this has been relocated to Section 5017(a)(8). 4924(d)(1) Telescopic boom cranes manufactured after February 28, 1992, shall be equipped with an anti-two-block device or two-block damage prevention feature for all points of two-blocking.</p>
<p>Temporary alternative measures: Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, and use a spotter when extending the boom.</p>		<p>California does not permit this temporary alternative measure.</p>
<p>(ii) Lattice boom cranes. (A) Lattice boom cranes manufactured after Feb 28, 1992, must be equipped with a device that either automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component), or warns the operator in time for</p>	<p><u>§5017(a)(8)(B) Lattice boom cranes. [See Section 4924(d)(2) and (d)(3)]</u></p>	<p>4924(d) Anti-two-block prevention and warning features. *** (2) Lattice boom cranes manufactured after February 28, 1992, shall be equipped with an anti-two-block device or a two-block warning feature, which functions for all points of two-blocking.</p>

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<p>the operator to prevent two-blocking. The device must prevent such damage/failure or provide adequate warning for all points where two-blocking could occur.</p>		
<p>(B) Lattice boom cranes and derricks manufactured after November 8, 2011 must be equipped with a device which automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device(s) must prevent such damage/failure at all points where two-blocking could occur.</p>	<p><u>§4924(d)(3) Lattice boom cranes and derricks manufactured after November 8, 2011, shall be equipped with a device which automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device(s) shall prevent such damage/failure at all points where two-blocking could occur.</u></p>	
<p>(C) Exception. The requirements in paragraphs (d)(3)(ii)(A) and (B) of this section do not apply to such lattice boom equipment when used for dragline, clamshell (grapple), magnet, drop ball, container handling, concrete bucket, marine operations that do not involve hoisting personnel, and pile driving work.</p>	<p>§4924(d) EXCEPTION: The requirements of subsections (d)(2) and (d)(3), do not apply to lattice boom cranes when used for dragline, clamshell (grapple), magnet, and drop ball work.</p>	<p>CA exception is more limited than federal.</p>
<p>(D) Temporary alternative measures. Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter.</p>		<p>Temporary alternative measures not permitted in CA.</p>
<p>(iii) Articulating cranes manufactured after December 31, 1999, that are equipped with a load hoist must be equipped with a device that automatically prevents damage from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device must prevent such damage at all points where two-blocking could occur.</p>	<p><u>§5017(a)(8)(C) Articulating boom cranes. [See Section 4924(d)(34)]</u></p>	<p>4924(d)(34). “Articulating boom cranes manufactured after August 30, 2001, equipped with a load hoisting device (winch) shall be equipped with a two-block damage prevention feature.” State effective date has previously been accepted by OSHA.</p>
<p>Temporary alternative measures: When two-</p>		<p>These temporary alternative measures not</p>

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<p>blocking could only occur with movement of the load hoist, clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter. When two-blocking could occur without movement of the load hoist, clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, and use a spotter when extending the boom.</p>		<p>permitted in CA.</p>
<p>(e) Category II operational aids and alternative measures. Operational aids listed in this paragraph that are not working properly must be repaired no later than 30 calendar days after the deficiency occurs.</p>		<p>Only one category in California.</p>
<p>Exception: If the employer documents that it has ordered the necessary parts within 7 calendar days of the occurrence of the deficiency, and the part is not received in time to complete the repair in 30 calendar days, the repair must be completed within 7 calendar days of receipt of the parts. See § 1926.1417(j) for additional requirements.</p>		
<p>(1) Boom angle or radius indicator. The equipment must have a boom angle or radius indicator readable from the operator's station. Temporary alternative measures: Radii or boom angle must be determined by measuring the radii or boom angle with a measuring device.</p>	<p><u>§5017(a)(9) Boom angle or radius indicator. The equipment shall have a boom angle or radius indicator readable from the operator's station. [See Section 4924(c)]</u> <u>EXCEPTION: Boom angle or radius indicator not applicable to articulating cranes.</u></p>	<p>Boom angle or radius indicators are safety devices in California; therefore this has been relocated to Section 5017(a)(9). 4924(c) Mobile cranes shall be provided with a boom angle or radius indicator which clearly shows the boom angle or <u>radius distance</u> to the operator at all times. EXCEPTION: When a boom angle or radius indicator is inoperative or malfunctioning, a</p>

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		<p>qualified person shall determine the radius or boom angle by measurement until the indicator is restored to operation. When a boom angle or radius indicator is inoperative or malfunctioning, a qualified person shall determine the radius or boom angle by measurement until the indicator is restored to operation.</p>
<p>(2) Jib angle indicator if the equipment has a luffing jib. Temporary alternative measures: Radii or jib angle must be determined by ascertaining the main boom angle and then measuring the radii or jib angle with a measuring device.</p>	<p><u>§5017(a)(10) A jib angle indicator shall be provided if the equipment has a luffing jib. [See Section 4924(c)]</u></p>	<p>Boom angle or radius indicators (and jib angle indicators by extension) are safety devices in California; therefore this has been placed in sec. 5017(a)(10).</p>
<p>(3) Boom length indicator if the equipment has a telescopic boom, except where the rated capacity is independent of the boom length. Temporary alternative measures. One or more of the following methods must be used: (i) Mark the boom with measured marks to calculate boom length, (ii) Calculate boom length from boom angle and radius measurements, (iii) Measure the boom with a measuring device.</p>	<p><u>§5018(d)(1) Boom length indicator if the equipment has a telescopic boom. [See Section 4954(b)]</u></p>	<p>4954(b) Telescopic booms that have an indicator shall show the boom length from minimum to maximum and be visible to the operator from the operator's position at the controls.</p>
<p>(4) Load weighing and similar devices. (i) Equipment (other than derricks and articulating cranes) manufactured after March 29, 2003 with a rated capacity over 6,000 pounds must have at least one of the following: load weighing device, load moment (or rated capacity) indicator, or load moment (or rated capacity) limiter. Temporary alternative measures: The weight of the load must be determined from a source</p>	<p><u>§5017(a)(11) Load weighing and similar devices. [See Section 4924(b)]</u></p>	<p>Load indicating/load moment/load limiting devices are safety devices in California.</p> <p>4924(b): All mobile cranes including truck-mounted tower cranes having either a maximum rated boom length exceeding 200 feet or a maximum rated capacity exceeding 50 tons shall be equipped with a load indicating device or a load moment device, or a device that prevents an</p>

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<p>recognized by the industry (such as the load’s manufacturer) or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight). This information must be provided to the operator prior to the lift.</p> <p>(ii) Articulating cranes manufactured after November 8, 2011 must have at least one of the following: automatic overload prevention device, load weighing device, load moment (or rated capacity) indicator, or load moment (rated capacity) limiter.</p> <p>Temporary alternative measures: The weight of the load must be determined from a source recognized by the industry (such as the load’s manufacturer) or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight). This information must be provided to the operator prior to the lift.</p>		<p>overload condition. Only approved devices as defined in the General Industry Safety Orders, Section 3206 shall be used.</p> <p>(1) All other mobile cranes manufactured after September 27, 2005, with a maximum rated capacity exceeding 3 tons shall be equipped with a load indicating device, load moment device, or a device that prevents an overload condition.</p> <p>EXCEPTION: When installed load indicating devices are not functional, a qualified person shall determine load weights until the device is restored to operation.</p> <p>(2) Load indicating devices shall be repaired in accordance with the manufacturer's recommendations.</p>
<p>(5) The following devices are required on equipment manufactured after November 8, 2011:</p> <p>(i) Outrigger/stabilizer position (horizontal beam extension) sensor/monitor if the equipment has outriggers or stabilizers.</p> <p>Temporary alternative measures: The operator must verify that the position of the outriggers or stabilizers is correct (in accordance with manufacturer procedures) before beginning operations requiring outrigger or stabilizer deployment.</p>	<p><u>§5018(d)(2) The following devices are required on equipment manufactured after July 7, 2011.</u></p> <p><u>(A) Outrigger/stabilizer position (beam extension) device or system if the equipment has outriggers or stabilizers.</u></p> <p><u>Temporary alternative measures: The operator shall verify that the position of the outriggers or stabilizers is correct (in accordance with manufacturer procedures) before beginning operations requiring outrigger or stabilizer deployment.</u></p>	<p>July 7, 2011, is the effective date for Section 1615.2 from which this was copied.</p>
<p>(ii) Hoist drum rotation indicator if the equipment has a hoist drum not visible from the operator’s station.</p>	<p><u>(B) Hoist drum rotation indicator if the equipment has a hoist drum not visible from the operator's station.</u></p>	

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<p>Temporary alternative measures: Mark the drum to indicate the rotation of the drum. In addition, install mirrors or remote video cameras and displays if necessary for the operator to see the mark.</p>	<p><u>Temporary alternative measures: Mark the drum to indicate the rotation of the drum. In addition, install mirrors or remote video cameras and displays if necessary for the operator to see the mark.</u></p>	
<p>§ 1926.1417 Operation.</p>	<p><u>§5008.1. Operation.</u></p>	
<p>(a) The employer must comply with all manufacturer procedures applicable to the operational functions of equipment, including its use with attachments.</p>	<p><u>(a) The employer shall comply with all manufacturer procedures applicable to the operational functions of equipment, including its use with attachments.</u></p>	
<p>(b) Unavailable operation procedures. (1) Where the manufacturer procedures are unavailable, the employer must develop and ensure compliance with all procedures necessary for the safe operation of the equipment and attachments. (2) Procedures for the operational controls must be developed by a qualified person. (3) Procedures related to the capacity of the equipment must be developed and signed by a registered professional engineer familiar with the equipment.</p>	<p><u>(d) Unavailable operation procedures. (1) Where the manufacturer procedures are unavailable, the employer shall develop and ensure compliance with all procedures necessary for the safe operation of the equipment and attachments. (2) Procedures for the operational controls shall be developed by a certified agent. (3) Procedures related to the capacity of the equipment shall be developed and signed by a certified agent.</u></p>	<p>Federal verbiage except that “qualified person” and “registered professional engineer” are replaced with “certified agent,” consistent with GISO Section 4965 and definitions in Section 4885.</p>
<p>(c) Accessibility of procedures. (1) The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator’s manual, must be readily available in the cab at all times for use by the operator.</p>	<p><u>(b) Accessibility of procedures. (1) The procedures applicable to the operation of the equipment, including rated capacities (load charts), recommended operating speeds, special hazard warnings, instructions, and operator’s manual, shall be readily available in the cab at all times for use by the operator.</u></p>	<p>Fed verbiage adopted. Note: Sections 4923 (boom-type mobile) and 4965(b) (tower cranes) contain additional requirements specific to the type of crane.</p>
<p>(2) Where rated capacities are available in the cab only in electronic form: In the event of a failure which makes the rated capacities inaccessible, the operator must immediately cease operations or follow safe shut-down</p>	<p><u>(2) Where rated capacities are available in the cab in electronic or other form: In the event of a failure which makes the rated capacities inaccessible, the operator shall immediately cease operations or follow safe shut-down</u></p>	<p>Adopt federal with clarification.</p>

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<p>procedures until the rated capacities (in electronic or other form) are available.</p>	<p><u>procedures until the rated capacities (in electronic or other form) are available.</u></p>	
<p>(d) The operator must not engage in any practice or activity that diverts his/her attention while actually engaged in operating the equipment, such as the use of cellular phones (other than when used for signal communications).</p>	<p><u>(c) The operator shall not engage in any practice or activity that diverts his/her attention while actually engaged in operating the equipment, such as the use of cellular phones (other than when used for signal communications).</u></p>	
<p>(e) Leaving the equipment unattended. (1) The operator must not leave the controls while the load is suspended, except where all of the following are met: (i) The operator remains adjacent to the equipment and is not engaged in any other duties.</p>	<p>§5008. Operating Practices. *** (e) Before leaving the crane unattended, the operator shall be required to: (1) Land or properly secure any attached load, bucket, lifting magnet, or other device; (2) Disengage clutch; (3) Set travel, swing, boom brakes, and other locking devices unless otherwise specified by the certified agents; (4) Put controls in the "off" position; (5) Stop the engine or motor; (6) Secure crane against accidental travel.</p>	<p>1926.1417(e) is covered jointly by Sections 4999(i) and 5008(e) [this row and next].</p>
<p>(ii) The load is to be held suspended for a period of time exceeding normal lifting operations. (iii) The competent person determines that it is safe to do so and implements measures necessary to restrain the boom hoist and telescoping, load, swing, and outrigger or stabilizer functions. (iv) Barricades or caution lines, and notices, are erected to prevent all employees from entering the fall zone. No employees, including those listed in §§ 1926.1425(b)(1) through (3), § 1926.1425(d) or § 1926.1425(e), are permitted in the fall zone.</p>	<p>§4999 Handling Loads. *** (i) Holding the Load. (1) When a load of any kind is to be suspended for <u>a period of time exceeding normal lifting operations</u> any considerable time, the drum holding mechanism shall be used in addition to the brake which shall also be applied. (2) Cranes, hoists, or derricks shall not be left unattended while the load is suspended unless the load is suspended over water, a barricaded area, or is blocked up or otherwise supported from below during repairs or emergency.</p>	

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<p>(2) The provisions in § 1926.1417(e)(1) do not apply to working gear (such as slings, spreader bars, ladders, and welding machines) where the weight of the working gear is negligible relative to the lifting capacity of the equipment as positioned, and the working gear is suspended over an area other than an entrance or exit.</p>		<p>The federal exception is less protective than existing GISO Section 4999(i) and “Load” which is defined by Section 4885 as: “<u>The object(s) being hoisted and/or the weight of the object(s). Both uses refer to the object(s) and the load-attaching equipment, such as ropes, slings, shackles, and any other ancillary attachment as defined by the crane/derrick manufacturer.</u>”</p>
<p>(f) Tag-out. (1) Tagging out of service equipment/functions. Where the employer has taken the equipment out of service, a tag must be placed in the cab stating that the equipment is out of service and is not to be used. Where the employer has taken a function(s) out of service, a tag must be placed in a conspicuous position stating that the function is out of service and is not to be used.</p>	<p><u>§5008.1(e) Tag-out.</u> <u>(1) Tagging out of service equipment/functions. Where the employer has taken the equipment out of service, a tag shall be placed in the cab stating that the equipment is out of service and is not to be used. Where the employer has taken a function(s) out of service, a tag shall be placed in a conspicuous position stating that the function is out of service and is not to be used.</u></p>	
<p>(2) Response to “do not operate”/tagout signs. (i) If there is a warning (tag-out or maintenance/do not operate) sign on the equipment or starting control, the operator must not activate the switch or start the equipment until the sign has been removed by a person authorized to remove it, or until the operator has verified that: (A) No one is servicing, working on, or otherwise in a dangerous position on the machine. (B) The equipment has been repaired and is working properly.</p>	<p><u>(2) Response to “do not operate”/tagout signs.</u> <u>(A) If there is a warning (tag-out or maintenance/do not operate) sign on the equipment or starting control, the operator shall not activate the switch or start the equipment until the sign has been removed by a person authorized to remove it in accordance with the provisions of Section 3314.</u></p>	<p>Modified federal verbiage. CA Lock-out Tag-out standards (Section 3314) are more protective than parts of this federal paragraph.</p>
<p>(ii) If there is a warning (tag-out or maintenance/do not operate) sign on any other switch or control, the operator must not activate</p>	<p><u>(B) If there is a warning (tag-out or maintenance/do not operate) sign on any other switch or control, the operator shall not</u></p>	<p>Modified federal verbiage. CA Lock-out Tag-out standards (Section 3314) are more protective than parts of this federal paragraph.</p>

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<p>that switch or control until the sign has been removed by a person authorized to remove it, or until the operator has verified that the requirements in paragraphs (f)(2)(i)(A) and (B) of this section have been met.</p>	<p><u>activate that switch or control until the sign has been removed by a person authorized to remove it in accordance with the provisions of Section 3314.</u></p>	
<p>(g) Before starting the engine, the operator must verify that all controls are in the proper starting position and that all personnel are in the clear.</p>	<p><u>§5008(f) Before closing the switch or starting the engine, all controls shall be in the "off" position and all personnel in the clear.</u></p>	
<p>(h) Storm warning. When a local storm warning has been issued, the competent person must determine whether it is necessary to implement manufacturer recommendations for securing the equipment. (i) [Reserved.]</p>	<p><u>§5008.1(f) Storm warning. When a local storm warning has been issued, the competent person shall determine whether it is necessary to implement manufacturer recommendations for securing the equipment.</u></p>	
<p>(j) If equipment adjustments or repairs are necessary: (1) The operator must, in writing, promptly inform the person designated by the employer to receive such information and, where there are successive shifts, to the next operator; and (2) The employer must notify all affected employees, at the beginning of each shift, of the necessary adjustments or repairs and all alternative measures.</p>	<p><u>§5008.1(g) If equipment adjustments or repairs are necessary: (1) The operator shall, in writing, promptly inform the person designated by the employer to receive such information and, where there are successive shifts, to the next operator; and (2) The employer shall notify all affected employees, at the beginning of each shift, of the necessary adjustments or repairs and all alternative measures.</u></p>	
<p>(k) Safety devices and operational aids must not be used as a substitute for the exercise of professional judgment by the operator. (l) [Reserved.]</p>	<p><u>(h) Safety devices and operational aids shall not be used as a substitute for the exercise of professional judgment by the operator.</u></p>	
<p>(m) If the competent person determines that there is a slack rope condition requiring re-spooling of the rope, it must be verified (before starting to lift) that the rope is seated on the drum and in the sheaves as the slack is removed.</p>	<p><u>§4999(a) The qualified person (rigger) shall be trained and capable of safely performing the rigging operation. All loads shall be rigged by a qualified person (rigger) or by a trainee under the direct visual supervision of a qualified person (rigger).</u></p>	<p>The qualified person (rigger) has responsibility.</p>

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	<p>*** (e) Before Starting to Hoist: *** (4) If there is a slack rope condition, the rope shall be properly seated on the drum and in the sheaves.</p>	
<p>(n) The competent person must adjust the equipment and/or operations to address the effect of wind, ice, and snow on equipment stability and rated capacity.</p>	<p><u>§5008.1(i) The competent person shall adjust the equipment and/or operations to address the effect of wind, ice, and snow on equipment stability and rated capacity.</u></p>	
<p>(o) Compliance with rated capacity. (1) The equipment must not be operated in excess of its rated capacity. (2) The operator must not be required to operate the equipment in a manner that would violate paragraph (o)(1) of this section. (3) Load weight. The operator must verify that the load is within the rated capacity of the equipment by at least one of the following methods:</p>	<p>§4999(b) Size of Load. A crane, derrick, or hoist shall not be loaded beyond the rated capacity or safe working load whichever is smaller, except for test purposes. In all operations where the weight of the load being handled is unknown and may approach the rated capacity, there shall be a qualified person (rigger) assigned to determine the <u>weight magnitude</u> of the load, unless the crane or derrick is equipped with a load weighing device. The operator shall not make any lift under these conditions until informed of such weight by the qualified person (rigger) assigned to that operation. <u>§4999(b)(1) Supplemental requirements for mobile cranes and derricks in construction: In all operations where the weight of the load being handled is unknown and may approach the rated capacity, the operator shall verify that the load is within the rated capacity of the equipment by at least one of the following methods:</u></p>	<p>GISO Section 4999(b) amended with federal requirements for cranes and derricks in construction.</p>
<p>(i) The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation</p>	<p><u>(A) The weight of the load shall be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation</u></p>	

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<p>method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. In addition, when requested by the operator, this information must be provided to the operator prior to the lift; or</p>	<p><u>method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. This information shall be provided to the operator prior to the lift; or</u></p>	
<p>(ii) The operator must begin hoisting the load to determine, using a load weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter, if it exceeds 75 percent of the maximum rated capacity at the longest radius that will be used during the lift operation. If it does, the operator must not proceed with the lift until he/she verifies the weight of the load in accordance with paragraph (o)(3)(i) of this section.</p>	<p><u>(B) The operator may begin hoisting the load to determine, using a load weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter, if it exceeds 75 percent of the maximum rated capacity at the longest radius that will be used during the lift operation. If it does, the operator shall not proceed with the lift until the operator verifies the weight of the load in accordance with subsection (b)(1)(A).</u></p>	
<p>(p) The boom or other parts of the equipment must not contact any obstruction.</p>	<p>§4999(f) During Hoisting: *** (2) The load, boom, or other parts of the equipment shall not contact any obstruction in a way which could cause falling material or damage to the boom.</p>	
<p>(q) The equipment must not be used to drag or pull loads sideways.</p>	<p>§4999(g) Side Loading. Side loading of booms shall be limited to freely suspended loads, and booms shall not be used for dragging loads sideways unless the boom is specifically designed and constructed to withstand such side loading.</p>	
<p>(r) On wheel-mounted equipment, no loads must be lifted over the front area, except as permitted by the manufacturer.</p>	<p>§4999(k) On truck wheel-mounted cranes, no loads shall be lifted over the front area except as <u>permitted by the manufacturer or approved by a the certified agent agency.</u></p>	<p>Modified to retain CA use of certified agent (which includes the manufacturer).</p>
<p>(s) The operator must test the brakes each time a load that is 90% or more of the maximum line pull is handled by lifting the load a few inches</p>	<p>§4994(c) The brakes shall be tested each time a load <u>is 90% or more of approaching</u> the rated load <u>as configured is handled</u> by raising the</p>	<p>State bases on the load chart which is easier for the operator to use than line pull which requires calculation based on reeving and other factors.</p>

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<p>and applying the brakes. In duty cycle and repetitive lifts where each lift is 90% or more of the maximum line pull, this requirement applies to the first lift but not to successive lifts.</p>	<p>load a few inches and applying the brakes.</p>	
<p>(t) Neither the load nor the boom must be lowered below the point where less than two full wraps of rope remain on their respective drums.</p>	<p>§4994(d) The load or the boom shall not be lowered below the point where less than two full wraps of rope remain on grooved drums and three full wraps on ungrooved drums.</p>	<p>Section 4994(d) is more protective.</p>
	<p>§4991. Travel (a) The travel of <u>boom-type equipment and cranes or boom-type excavators</u> shall be controlled so as to avoid collision with persons, material, and equipment. The cabs of units (of the revolving type) traveling under their own power shall be turned so as to provide the least obstruction to the operator's vision in the direction of travel, unless receiving signals from someone with an unobstructed view. (b) In transit, the following additional precautions for mobile cranes shall be exercised: (1) The boom shall be carried in line with the direction of motion and the superstructure shall be secured against rotation, except when negotiating turns when there is an operator in the cab, or when the boom is supported on a dolly. (2) The empty hook, headache ball, or block shall be lashed or otherwise restrained so that it cannot swing freely.</p>	
<p>(u) Traveling with a load. (1) Traveling with a load is prohibited if the practice is prohibited by the manufacturer. (2) Where traveling with a load, the employer must ensure that:</p>	<p><u>(c) Traveling with a load is prohibited if the practice is prohibited by the equipment manufacturer.</u> <u>(d) Where traveling with a load, the employer shall ensure that:</u></p>	<p>Federal verbiage added as subsections (c) and (d). Federal (u)(2)(ii) is redundant.</p>

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<p>(i) A competent person supervises the operation, determines if it is necessary to reduce rated capacity, and makes determinations regarding load position, boom location, ground support, travel route, overhead obstructions, and speed of movement necessary to ensure safety.</p> <p>(ii) The determinations of the competent person required in paragraph (u)(2)(i) of this section are implemented.</p> <p>(iii) For equipment with tires, tire pressure specified by the manufacturer is maintained.</p>	<p><u>(1) A competent person supervises the operation, determines if it is necessary to reduce rated capacity, and makes determinations regarding load position, boom location, ground support, travel route, overhead obstructions, and speed of movement necessary to ensure safety.</u></p> <p><u>EXCEPTION TO SUBSECTION (d)(1): Marine terminal operations regulated by Article 14 of these Orders.</u></p> <p><u>(2) For equipment with tires, tire pressure specified by the equipment manufacturer for traveling with a load shall be maintained.</u></p>	
<p>(v) Rotational speed of the equipment must be such that the load does not swing out beyond the radius at which it can be controlled.</p>	<p>§4993(a) When rotating the crane, sudden stops shall be avoided. Rotational speed shall be such that the load does not swing out beyond the radius at which it can be safely controlled.</p>	
<p>(w) A tag or restraint line must be used if necessary to prevent rotation of the load that would be hazardous.</p>	<p>§4993(b) Tag or restraint lines shall be used where rotation of the load is hazardous.</p>	
<p>(x) The brakes must be adjusted in accordance with manufacturer procedures to prevent unintended movement.</p>	<p>§5034. Adjustments and Repairs. ***</p> <p>(d) Adjustments shall be maintained to assure correct functioning of the following components: ***</p> <p>(5) Brakes.</p>	
<p>(y) The operator must obey a stop (or emergency stop) signal, irrespective of who gives it.</p>	<p>§5001. Signals. (b) Only qualified persons shall be permitted to give signals. EXCEPTION: A stop signal may be given by any person. ***</p> <p>§5008. Operating Practices.</p>	

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	(b) The operator shall respond to signals only from the appointed signal person, but shall obey a stop signal from any person.	
(z) Swinging locomotive cranes. A locomotive crane must not be swung into a position where railway cars on an adjacent track could strike it, until it is determined that cars are not being moved on the adjacent track and that proper flag protection has been established.	§4993(d) A locomotive crane shall not be swung into a position where railway cars on an adjacent track might strike it, until it has been ascertained that cars are not being moved on the adjacent track and proper flag protection has been established.	
(aa) Counterweight/ballast. (1) The following applies to equipment other than tower cranes: (i) Equipment must not be operated without the counterweight or ballast in place as specified by the manufacturer. (ii) The maximum counterweight or ballast specified by the manufacturer for the equipment must not be exceeded. (2) Counterweight/ballast requirements for tower cranes are specified in § 1926.1435(b)(8).	§5008.1(j) <u>Counterweight/ballast.</u> (1) <u>The following applies to equipment other than tower cranes:</u> <u>(A) Equipment shall not be operated without the counterweight or ballast in place as specified by the manufacturer.</u> <u>(B) The maximum counterweight or ballast specified by the manufacturer for the equipment shall not be exceeded.</u> (2) <u>Counterweight/ballast requirements for tower cranes are specified in Section 4966(m).</u>	
§ 1926.1418 Authority to stop operation.		
Whenever there is a concern as to safety, the operator must have the authority to stop and refuse to handle loads until a qualified person has determined that safety has been assured.	§5008(c) Whenever the operator doubts the safety of a movement, the operator shall <u>have authority</u> be authorized to stop the hoisting operation until a <u>qualified person and the operator</u> determine and agree that safety has been assured.	
§ 1926.1419 Signals—general requirements.	§5001. Signals – General Requirements.	
(a) A signal person must be provided in each of the following situations: (1) The point of operation, meaning the load travel or the area near or at load placement, is not in full view of the operator.	(a) A signal person shall be provided when the point of operation is not in full and direct view of the operator unless a signaling or control device is provided for safe direction of the operator. (1) <u>Supplemental requirements for mobile</u>	Existing state amended with federal.

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<p>(2) When the equipment is traveling, the view in the direction of travel is obstructed.</p> <p>(3) Due to site specific safety concerns, either the operator or the person handling the load determines that it is necessary.</p>	<p><u>cranes in construction. A signal person shall be provided if:</u></p> <p><u>(A) when the equipment is traveling, the view in the direction of travel is obstructed.</u></p> <p><u>(B) due to site specific safety concerns, either the operator or the person handling the load determines that it is necessary.</u></p>	
<p>(b) Types of signals. Signals to operators must be by hand, voice, audible, or new signals.</p>	<p><u>(c) Types of signals. Signals to operators shall be by hand, voice, or audible.</u></p>	
<p>(c) Hand signals.</p> <p>(1) When using hand signals, the Standard Method must be used (see Appendix A of this subpart).</p>	<p><u>(d) Hand Signals. Signal systems other than manual shall be protected against unauthorized use, breakage, weather or obstruction which will interfere with safe operation. In the event of any known malfunction, an alternate signal system shall be used or all motion shall be stopped.</u></p> <p><u>(1) (e) A uniform signal system shall be used on all operations and if hand signals are used, they shall be clearly understood by the operator. (Note: For recommended hand signals, see Plate I.)</u></p>	
<p>Exception: Where use of the Standard Method for hand signals is infeasible, or where an operation or use of an attachment is not covered in the Standard Method, nonstandard hand signals may be used in accordance with paragraph (c)(2) of this section.</p>	<p><u>EXCEPTION: Where an operation or use of an attachment is not covered in the Standard Method, nonstandard hand signals may be used in accordance with subsection (d)(2).</u></p>	
<p>(2) Non-standard hand signals. When using non-standard hand signals, the signal person, operator, and lift director (where there is one) must contact each other prior to the operation and agree on the non-standard hand signals that will be used.</p>	<p><u>(2) Non-standard hand signals. When using non-standard hand signals, the signal person, operator, and lift director (where there is one) shall contact each other prior to the operation and agree on the non-standard hand signals that will be used.</u></p>	
<p>(d) New signals. Signals other than hand, voice, or audible signals may be used where the</p>		<p>“New signals” in the context used in the federal standards may be permitted in CA subject to a</p>

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<p>employer demonstrates that: (1) The new signals provide at least equally effective communication as voice, audible, or Standard Method hand signals, or (2) The new signals comply with a national consensus standard that provides at least equally effective communication as voice, audible, or Standard Method hand signals.</p>		<p>variance.</p>
<p>(e) Suitability. The signals used (hand, voice, audible, or new), and means of transmitting the signals to the operator (such as direct line of sight, video, radio, etc.), must be appropriate for the site conditions.</p>	<p><u>(g) Suitability. The signals used (hand, voice, or audible), and means of transmitting the signals to the operator (such as direct line of sight, video, radio, etc.), shall be appropriate for the site conditions.</u></p>	
<p>(f) During operations requiring signals, the ability to transmit signals between the operator and signal person must be maintained. If that ability is interrupted at any time, the operator must safely stop operations requiring signals until it is reestablished and a proper signal is given and understood.</p>	<p><u>(h) During operations requiring signals, the ability to transmit signals between the operator and signal person shall be maintained. If that ability is interrupted at any time, the operator shall safely stop operations requiring signals until it is reestablished and a proper signal is given and understood.</u> (1) (d) Signal systems other than manual shall be protected against unauthorized use, breakage, weather or obstruction which will interfere with safe operation. In the event of any known malfunction, an alternate signal system shall be used or all motion shall be stopped.</p>	<p>Subsection (h)(1) copied from GISO Section 5001(d) which supplements the federal standard.</p>
<p>(g) If the operator becomes aware of a safety problem and needs to communicate with the signal person, the operator must safely stop operations. Operations must not resume until the operator and signal person agree that the problem has been resolved.</p>	<p><u>(i) If the operator becomes aware of a safety problem and needs to communicate with the signal person, the operator shall safely stop operations. Operations shall not resume until the operator and signal person agree that the problem has been resolved.</u></p>	<p>Similar in effect to Section 5008(c).</p>
<p>(h) Only one person may give signals to a crane/derrick at a time, except in circumstances</p>	<p>§5001. Signals. ***</p>	

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<p>covered by paragraph (j) of this section. (i) [Reserved.] (j) Anyone who becomes aware of a safety problem must alert the operator or signal person by giving the stop or emergency stop signal. (Note: § 1926.1417(y) requires the operator to obey a stop or emergency stop signal).</p>	<p>(b) Only qualified persons shall be permitted to give signals. EXCEPTION: A stop signal may be given by any person. ==== §5008. Operating Practices. *** (b) The operator shall respond to signals only from the appointed signal person, but shall obey a stop signal from any person.</p>	
<p>(k) All directions given to the operator by the signal person must be given from the operator's direction perspective. (l) [Reserved.]</p>	<p><u>§5001(j) All directions given to the operator by the signal person shall be given from the operator's direction perspective.</u></p>	
<p>(m) Communication with multiple cranes/derricks. Where a signal person(s) is in communication with more than one crane/derrick, a system must be used for identifying the crane/derrick each signal is for, as follows: (1) for each signal, prior to giving the function/direction, the signal person must identify the crane/derrick the signal is for, or (2) must use an equally effective method of identifying which crane/derrick the signal is for.</p>	<p><u>§5001(k) Communication with multiple cranes/derricks. Where a signal person(s) is in communication with more than one crane/derrick, a system shall be used for identifying the crane/derrick each signal is for, as follows:</u> <u>(1) for each signal, prior to giving the function/direction, the signal person shall identify the crane/derrick the signal is for, or</u> <u>(2) shall use an equally effective method of identifying which crane/derrick the signal is for.</u></p>	
<p>§ 1926.1420 Signals—radio, telephone or other electronic transmission of signals.</p>	<p><u>§5001.1. Signals – Radio, Telephone or other Electronic Transmission of Signals.</u></p>	
<p>(a) The device(s) used to transmit signals must be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable. (b) Signal transmission must be through a dedicated channel, except: (1) Multiple cranes/derricks and one or more</p>	<p><u>(a) The device(s) used to transmit signals shall be tested on site before beginning operations to ensure that the signal transmission is effective, clear, and reliable.</u> <u>(b) Signal transmission shall be through a dedicated channel, except:</u> <u>(1) Multiple cranes/derricks and one or more</u></p>	

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<p>signal persons may share a dedicated channel for the purpose of coordinating operations. (2) Where a crane is being operated on or adjacent to railroad tracks, and the actions of the crane operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks. (c) The operator’s reception of signals must be by a hands-free system.</p>	<p><u>signal persons may share a dedicated channel for the purpose of coordinating operations.</u> <u>(2) Where a crane is being operated on or adjacent to railroad tracks, and the actions of the crane operator need to be coordinated with the movement of other equipment or trains on the same or adjacent tracks.</u> <u>(c) The operator’s reception of signals shall be by a hands-free system.</u> <u>(d) The signal person shall audibly or visually signal the operator if the signal person becomes aware that communication with the operator has been interrupted during hoisting operations and the operator shall safely stop operations in accordance with Section 5001(h).</u></p>	
<p>§ 1926.1421 Signals—voice signals—additional requirements.</p>	<p><u>§5001.2. Signals – Voice Signals – Additional Requirements.</u></p>	
<p>(a) Prior to beginning operations, the operator, signal person and lift director (if there is one), must contact each other and agree on the voice signals that will be used. Once the voice signals are agreed upon, these workers need not meet again to discuss voice signals unless another worker is added or substituted, there is confusion about the voice signals, or a voice signal is to be changed.</p>	<p><u>(a) Prior to beginning operations, the operator, signal person and lift director (if there is one), shall contact each other and agree on the voice signals that will be used. Once the voice signals are agreed upon, these workers need not meet again to discuss voice signals unless another worker is added or substituted, or there is confusion about the voice signals, or a voice signal is to be changed.</u></p>	
<p>(b) Each voice signal must contain the following three elements, given in the following order: function (such as hoist, boom, etc.), direction; distance and/or speed; function, stop command.</p>	<p><u>(b) Each voice signal shall contain the following three elements, given in the following order: (1) function (such as hoist, boom, etc.) and direction; (2) distance and/or speed; (3) function and stop command.</u></p>	
<p>(c) The operator, signal person and lift director (if there is one), must be able to effectively communicate in the language used.</p>	<p><u>(c) The operator, signal person and lift director (if there is one), shall be able to effectively communicate in the language used.</u></p>	
<p>§ 1926.1422 Signals—hand signal chart.</p>	<p><u>§5001. Signals – General Requirements.</u></p>	

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<p>Hand signal charts must be either posted on the equipment or conspicuously posted in the vicinity of the hoisting operations.</p>	<p>(e) There shall be conspicuously posted in the vicinity of the hoisting operations, a legible chart depicting and explaining the system of signals used.</p>	
<p>§ 1926.1423 Fall protection.</p>	<p><u>§5011. Fall Protection – Supplemental/Specific Requirements for Cranes.</u></p>	
<p>(a) Application. (1) Paragraphs (b), (c)(3), (e) and (f) of this section apply to all equipment covered by this subpart except tower cranes. (2) Paragraphs (c)(1), (c)(2), (d), (g), (j) and (k) of this section apply to all equipment covered by this subpart. (3) Paragraphs (c)(4) and (h) of this section apply only to tower cranes.</p>	<p><u>(a) Application.</u> <u>(1) Subsections (b), (c)(2), (e) and (f) apply to all equipment covered by Group 13 except tower cranes.</u> <u>(2) Subsections (c)(1), and (d) apply to all equipment covered by Group 13.</u> <u>(3) Subsections (c)(3) and (g) apply only to tower cranes.</u></p>	
<p>(b) Boom walkways. (1) Equipment manufactured after November 8, 2011 with lattice booms must be equipped with walkways on the boom(s) if the vertical profile of the boom (from cord centerline to cord centerline) is 6 or more feet. (2) Boom walkway criteria. (i) The walkways must be at least 12 inches wide. (ii) Guardrails, railings and other permanent fall protection attachments along walkways are: (A) Not required. (B) Prohibited on booms supported by pendant ropes or bars if the guardrails/railings/ attachments could be snagged by the ropes or bars. (C) Prohibited if of the removable type (designed to be installed and removed each time the boom is assembled/disassembled).</p>	<p><u>(b) Boom walkways (Lattice Booms).</u> <u>(1) Equipment manufactured after July 7, 2011, with lattice booms shall be equipped with walkways on the boom(s) if the vertical profile of the boom (from cord centerline to cord centerline) is 6 or more feet.</u> <u>(2) Boom walkway criteria.</u> <u>(A) The walkways shall be at least 12 inches wide.</u> <u>(B) Guardrails, railings and other permanent fall protection attachments along walkways are:</u> <u>1. Prohibited on booms supported by pendant ropes or bars if the guardrails/railings/ attachments could be snagged by the ropes or bars.</u> <u>2. Prohibited if of the removable type (designed to be installed and removed each</u></p>	<ul style="list-style-type: none"> ▪ 1926.1423(b)(2)(ii)(A) not copied as it negates all the requirements of 1926.1423(b)(2)(ii). ▪ July 7, 2011, date is carried forward from CSO Section 1610.7(b).

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<p>(D) Where not prohibited, guardrails or railings may be of any height up to, but not more than, 45 inches.</p>	<p><u>time the boom is assembled/disassembled).</u> <u>3. Where not prohibited, guardrails or railings, if provided, may be of any height up to, but not more than, 45 inches.</u></p>	
<p>(c) Steps, handholds, ladders, grabrails, guardrails and railings. (1) Section 1926.502(b) does not apply to equipment covered by this subpart.</p>	<p><u>(c) Steps, handholds, ladders, grabrails, guardrails and railings.</u></p>	
<p>(2) The employer must maintain in good condition originally-equipped steps, handholds, ladders and guardrails/railings/grabrails.</p>	<p><u>(1) The employer shall maintain in good condition originally-equipped steps, handholds, ladders and guardrails/railings/grabrails.</u></p>	
<p>(3) Equipment manufactured after November 8, 2011 must be equipped so as to provide safe access and egress between the ground and the operator work station(s), including the forward and rear positions, by the provision of devices such as steps, handholds, ladders, and guardrails/railings/grabrails. These devices must meet the following criteria: (i) Steps, handholds, ladders and guardrails/railings/grabrails must meet the criteria of SAE J185 (May 2003) (incorporated by reference, see § 1926.6) or ISO 11660–2:1994(E) (incorporated by reference, see § 1926.6) except where infeasible.</p>	<p><u>(2) Equipment (other than tower cranes) manufactured after July 7, 2011, shall be equipped so as to provide safe access and egress between the ground and the operator work station(s), including the forward and rear positions, by the provision of devices such as steps, handholds, ladders, and guardrails/railings/grabrails.</u></p>	<ul style="list-style-type: none"> ▪ July 7, 2011, date is carried forward from CSO Section 1610.7. ▪ Referenced standards are included in the B30 standards. The employer is just required to maintain them in good condition per subsection (c)(1).
<p>(ii) Walking/stepping surfaces, except for crawler treads, must have slip resistant features/properties (such as diamond plate metal, strategically placed grip tape, expanded metal, or slip-resistant paint).</p>	<p><u>(c)(4) Walking/stepping surfaces, except for crawler treads, shall have slip resistant features/ properties (such as diamond plate metal, strategically placed grip tape, expanded metal, or slip-resistant paint).</u></p>	
<p>(4) Tower cranes manufactured after November 8, 2011 must be equipped so as to provide safe access and egress between the ground and the cab, machinery platforms, and tower (mast), by</p>	<p><u>(c)(3) Tower cranes manufactured after July 7, 2011, shall be equipped so as to provide safe access and egress between the ground and the cab, machinery platforms, and tower (mast), by</u></p>	<ul style="list-style-type: none"> ▪ July 7, 2011, date is carried forward from CSO Section 1610.7. ▪ Referenced standards are included in the B30 standards. The employer is just

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<p>the provision of devices such as steps, handholds, ladders, and guardrails/railings/grabrails. These devices must meet the following criteria: (i) Steps, handholds, ladders, and guardrails/railings/grabrails must meet the criteria of ISO 11660–1:2008(E) (incorporated by reference, see § 1926.6) and ISO 11660–3:2008(E) (incorporated by reference, see § 1926.6) or SAE J185 (May 2003) (incorporated by reference, see § 1926.6) except where infeasible.</p>	<p><u>the provision of devices such as steps, handholds, ladders, and guardrails/railings/grabrails.</u></p>	<p>required to maintain them in good condition per subsection (c)(1).</p>
<p>(ii) Walking/stepping surfaces must have slip-resistant features/properties (such as diamond plate metal, strategically placed grip tape, expanded metal, or slip-resistant paint).</p>	<p><u>(c)(4) Walking/stepping surfaces, except for crawler treads, shall have slip resistant features/properties (such as diamond plate metal, strategically placed grip tape, expanded metal, or slip-resistant paint).</u></p>	
<p>(d) Personal fall arrest and fall restraint systems. Personal fall arrest system components must be used in personal fall arrest and fall restraint systems and must conform to the criteria in § 1926.502(d) except that § 1926.502(d)(15) does not apply to components used in personal fall arrest and fall restraint systems. Either body belts or body harnesses must be used in personal fall arrest and fall restraint systems.</p>	<p><u>(d) Personal fall arrest and fall restraint systems. Personal fall arrest and fall restraint systems shall conform to the requirements of Construction Safety Orders Article 24, Fall Protection.</u></p>	<ul style="list-style-type: none"> ▪ CSO Article 24 is a horizontal standard for fall protection. ▪ Body belts are not permitted for use in fall arrest systems.
<p>(e) For non-assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 6 feet above a lower level as follows: (1) When moving point-to-point: (i) On non-lattice booms (whether horizontal or not horizontal).</p>	<p><u>(e) For non-assembly/disassembly work, the employer shall provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 7-1/2 feet above a lower level as follows: (1) When moving point-to-point: (A) On non-lattice booms (whether horizontal or not horizontal).</u></p>	<ul style="list-style-type: none"> ▪ (e)(1)(iii) was changed to an exception as it is confusing in the federal verbiage (is the trigger height 6’ or 15’ for horizontal lattice booms?) ▪ (e)(1)(B) changed to 15’ or less to be consistent with Section 1669 and with subsection (f) below.

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<p>(ii) On lattice booms that are not horizontal. (iii) On horizontal lattice booms where the fall distance is 15 feet or more.</p>	<p><u>(B) On lattice booms that are not horizontal.</u> <u>EXCEPTION: On horizontal lattice booms where the fall distance is 15 feet or less.</u></p>	
<p>(2) While at a work station on any part of the equipment (including the boom, of any type), except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.</p>	<p><u>(2) While at a work station on any part of the equipment (including the boom, of any type), except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.</u></p>	
	<p><u>EXCEPTIONS TO SUBSECTION (e):</u> <u>1. For tower cranes, see subsection (g), of this section.</u> <u>2: Marine terminal operations are regulated by Article 14 of these Orders.</u></p>	<p>There is no federal counterpart language.</p>
<p>(f) For assembly/disassembly work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level, except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.</p>	<p><u>(f) For assembly/disassembly work, the employer shall provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 15 feet above a lower level.</u> <u>EXCEPTIONS:</u> <u>1. When the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.</u> <u>2. For tower cranes, see subsection (g), of this section.</u></p>	<p>Exception clarified.</p>
<p>(g) Anchorage criteria. (1) Sections 1926.502(d)(15) and 1926.502(e)(2) apply to equipment covered by this subpart only to the extent delineated in paragraph (g)(2) of this section. (2) Anchorages for personal fall arrest and positioning device systems. (i) Personal fall arrest systems must be anchored to any apparently substantial part of the equipment unless a competent person, from a</p>	<p><u>(d) Personal fall arrest and fall restraint systems.</u> <u>Personal fall arrest and fall restraint systems shall conform to the requirements of Construction Safety Orders Article 24, Fall Protection.</u></p>	<p>1926.502(d)(15) and 1926.502(e)(2) are less protective than CA standards.</p>

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<p>visual inspection, without an engineering analysis, would conclude that the criteria in § 1926.502(d)(15) would not be met.</p> <p>(ii) Positioning device systems must be anchored to any apparently substantial part of the equipment unless a competent person, from a visual inspection, without an engineering analysis, would conclude that the criteria in § 1926.502(e)(2) would not be met.</p> <p>(iii) Attachable anchor devices (portable anchor devices that are attached to the equipment) must meet the anchorage criteria in § 1926.502(d)(15) for personal fall arrest systems and § 1926.502(e)(2) for positioning device systems.</p> <p>(3) Anchorages for fall restraint systems. Fall restraint systems must be anchored to any part of the equipment that is capable of withstanding twice the maximum load that an employee may impose on it during reasonably anticipated conditions of use.</p>		
<p>(h) Tower cranes.</p> <p>(1) For work other than erecting, climbing, and dismantling, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 6 feet above a lower level, except when the employee is at or near draw-works (when the equipment is running), in the cab, or on the deck.</p> <p>(2) For erecting, climbing, and dismantling work, the employer must provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an</p>	<p><u>(g) Tower cranes.</u></p> <p><u>(1) For work other than erecting, climbing, and dismantling, the employer shall provide and ensure the use of fall protection equipment for employees who are on a walking/working surface with an unprotected side or edge more than 7-1/2 feet above a lower level.</u></p> <p><u>EXCEPTION: When the employee is in the cab, or on the deck.</u></p> <p><u>(2) For erecting, climbing, and dismantling work, the employer shall provide and ensure the use of fall protection equipment for employees who are on a walking/working</u></p>	

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<p>unprotected side or edge more than 15 feet above a lower level. (i) [Reserved.]</p>	<p><u>surface with an unprotected side or edge more than 15 feet above a lower level.</u></p>	
<p>(j) Anchoring to the load line. A personal fall arrest system is permitted to be anchored to the crane/derrick's hook (or other part of the load line) where all of the following requirements are met: (1) A qualified person has determined that the set-up and rated capacity of the crane/derrick (including the hook, load line and rigging) meets or exceeds the requirements in § 1926.502(d)(15). (2) The equipment operator must be at the work site and informed that the equipment is being used for this purpose. (3) No load is suspended from the load line when the personal fall arrest system is anchored to the crane/derrick's hook (or other part of the load line).</p>		<p>This practice is not allowed in CA. Personal fall arrest and fall restraint systems shall conform to the requirements of Construction Safety Orders Article 24, Fall Protection.</p>
<p>(k) Training. The employer must train each employee who may be exposed to fall hazards while on, or hoisted by, equipment covered by this subpart on all of the following: (1) the requirements in this subpart that address fall protection. (2) the applicable requirements in §§ 1926.500 and 1926.502.</p>		<p>This is covered by Section 3203(a)(7).</p>
<p>§ 1926.1424 Work area control.</p>	<p>§4993.1. Work Area Control.</p>	
<p>(a) Swing radius hazards. (1) The requirements in paragraph (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 reasonably foreseeable risk of:</p>	<p>(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 of:</p>	

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<p>(i) Striking and injuring an employee; or (ii) Pinching/crushing an employee against another part of the equipment or another object.</p>	<p>(A) Striking and injuring an employee; or (B) Pinching/crushing an employee against another part of the equipment or another object.</p>	
<p>(2) To prevent employees from entering these hazard areas, the employer must: (i) 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. (ii) 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 feasible to erect such barriers on the ground nor on the equipment, the hazard areas must 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. In addition, the employer must train each employee to understand what these markings signify.</p>	<p>(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.</p>	<p>Training is covered by Section 3203(a)(7).</p>
<p>(3) Protecting employees in the hazard area. (i) 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) must ensure that the operator is informed that he/she is going to that location. (ii) Where the operator knows that an employee went to a location covered by paragraph (a)(1)</p>	<p>(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 they are going to that location. (B) When the operator has been informed of employee entry to a location covered by</p>	

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<p>of this section, the operator must not rotate the superstructure until the operator is informed in accordance with a prearranged system of communication that the employee is in a safe position.</p>	<p>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.</p>	
<p>(b) Where any part of a crane/derrick is within the working radius of another crane/derrick, the controlling entity must 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), or employers, must institute such a system.</p>	<p>(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.</p>	
<p>§ 1926.1425 Keeping clear of the load.</p>	<p>§5002. Overhead Loads.</p>	
<p>(a) Where available, hoisting routes that minimize the exposure of employees to hoisted loads must be used, to the extent consistent with public safety.</p>	<p><u>(a)</u> Operations shall be conducted and the job controlled in a manner that will avoid exposure of employees to the hazard of overhead loads. Wherever loads must be passed directly over workers, occupied work spaces or occupied passageways, safety type hooks or equivalent means of preventing the loads from becoming disengaged shall be used.</p>	
	<p>NOTE: Employees should not work in the area directly beneath a suspended load.</p>	<p>Note will be replaced by new subsections below.</p>
<p>(b) While the operator is not moving a suspended load, no employee must be within the fall zone, except for employees:</p> <p>(1) Engaged in hooking, unhooking or guiding a load;</p> <p>(2) Engaged in the initial attachment of the load to a component or structure; or</p> <p>(3) Operating a concrete hopper or concrete bucket.</p>	<p><u>(b) While the operator is not moving a suspended load, no employee shall be within the fall zone.</u></p> <p><u>EXCEPTIONS:</u></p> <p><u>(1) Employees engaged in hooking, unhooking or guiding a load, or</u></p> <p><u>(2) Employees engaged in the initial attachment of the load to a component or structure; or</u></p> <p><u>(3) Employees operating a concrete hopper or concrete bucket, or</u></p>	<p>Modified for clarity.</p>

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	<u>(4) Oiler or assistant to the operator.</u>	
(c) When employees are engaged in hooking, unhooking, or guiding the load, or in the initial connection of a load to a component or structure and are within the fall zone, all of the following criteria must be met: (1) The materials being hoisted must be rigged to prevent unintentional displacement.	<u>(c) When employees are engaged in hooking, unhooking, or guiding the load, or in the initial connection of a load to a component or structure and are within the fall zone, all of the following criteria shall be met: (1) The materials being hoisted shall be rigged to prevent unintentional displacement.</u>	
(2) Hooks with self-closing latches or their equivalent must be used. Exception: “J” hooks are permitted to be used for setting wooden trusses.	<u>(2) Hooks with self-closing latches or their equivalent shall be used.</u>	J-hook exception not currently allowed by Title 8.
(3) The materials must be rigged by a qualified rigger.	<u>(3) The materials shall be rigged by a qualified rigger.</u>	
(d) Receiving a load. Only employees needed to receive a load are permitted to be within the fall zone when a load is being landed.	<u>(d) Receiving a load. Only employees needed to receive a load are permitted to be within the fall zone when a load is being landed.</u>	
(e) During a tilt-up or tilt-down operation: (1) No employee must be directly under the load. (2) Only employees essential to the operation are permitted in the fall zone (but not directly under the load). An employee is essential to the operation if the employee is conducting one of the following operations and the employer can demonstrate it is infeasible for the employee to perform that operation from outside the fall zone: (1) Physically guide the load; (2) closely monitor and give instructions regarding the load’s movement; or (3) either detach it from or initially attach it to another component or structure (such as, but not limited to, making an initial connection or installing bracing).	<u>(e) During a tilt-up or tilt-down operation: (1) No employee shall be directly under the load. (2) Only employees essential to the operation are permitted in the fall zone (but not directly under the load). An employee is essential to the operation if the employee is conducting one of the following operations and the employer can demonstrate it is infeasible for the employee to perform that operation from outside the fall zone: (A) Physically guide the load; (B) Closely monitor and give instructions regarding the load’s movement; or (C) Either detach it from or initially attach it to another component or structure (such as, but not limited to, making an initial connection or installing bracing).</u>	There are some situations in tilt-up where the employee must get in this position to install braces after the slab is tilted up.

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<p>Note: Boom free fall is prohibited when an employee is in the fall zone of the boom or load, and load line free fall is prohibited when an employee is directly under the load; see § 1926.1426.</p>	<p><u>NOTES:</u> <u>1. Boom free fall is prohibited when an employee is in the fall zone of the boom or load.</u> <u>2. Load line free fall is prohibited when an employee is directly under the load; see Section 4928.1.</u></p>	
<p>§ 1926.1426 Free fall and controlled load lowering.</p>	<p>§4928.1. Free Fall and Controlled Load Lowering.</p>	
<p>(a) Boom free fall prohibitions.</p> <p>(1) The use of equipment in which the boom is designed to free fall (live boom) is prohibited in each of the following circumstances:</p> <p>(i) An employee is in the fall zone of the boom or load.</p> <p>(ii) An employee is being hoisted.</p> <p>(iii) The load or boom is directly over a power line, or over any part of the area extending the Table A of § 1926.1408 clearance distance to each side of the power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the boom or the load.</p> <p>(iv) The load is over a shaft, except where there are no employees in the shaft.</p> <p>(v) The load is over a cofferdam, except where there are no employees in the fall zone of the boom or the load.</p> <p>(vi) Lifting operations are taking place in a refinery or tank farm.</p>	<p><u>(a) Boom hoist and load hoist free fall prohibitions.</u></p> <p><u>(1) The use of equipment in which the boom, or hoist line in use, is configured to free fall (live boom/live hoist line) is prohibited in each of the following circumstances:</u></p> <p><u>(A) An employee is in the fall zone of the boom or load.</u></p> <p><u>(B) An employee is being hoisted.</u></p> <p><u>(C) The load or boom is directly over a power line, or over any part of the area extending the Table A of Section 5003.1 clearance distance to each side of the power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the boom or the load.</u></p> <p><u>NOTE TO (a)(1)(C): Operations in proximity to overhead lines are also subject to Section 2946.</u></p> <p><u>(D) The load is over a shaft, except where there are no employees in the shaft.</u></p> <p><u>(E) The load is over a cofferdam, except where there are no employees in the fall zone of the boom or the load.</u></p> <p><u>(F) Lifting operations are taking place in a refinery or tank farm.</u></p>	<p>Mods reviewed at AC3.</p>

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<p>(2) The use of equipment in which the boom is designed to free fall (live boom) is permitted only where none of the circumstances listed in paragraph (a)(1) of this section are present and:</p> <p>(i) The equipment was manufactured prior to October 31, 1984; or</p> <p>(ii) The equipment is a floating crane/derrick or a land crane/derrick on a vessel/flotation device.</p>	<p><u>(2) The use of equipment in which the boom is configured to free fall (live boom) is permitted only where none of the circumstances listed in subsection (a)(1) are present and:</u></p> <p><u>(A) The equipment was manufactured prior to October 31, 1984; or</u></p> <p><u>(B) The equipment is a floating crane/derrick or a land crane/derrick on a vessel/flotation device.</u></p>	
<p>(b) Preventing boom free fall. Where the use of equipment with a boom that is designed to free fall (live boom) is prohibited, the boom hoist must have a secondary mechanism or device designed to prevent the boom from falling in the event the primary system used to hold or regulate the boom hoist fails, as follows:</p> <p>(1) Friction drums must have:</p> <p>(i) A friction clutch and, in addition, a braking device, to allow for controlled boom lowering.</p> <p>(ii) A secondary braking or locking device, which is manually or automatically engaged, to back-up the primary brake while the boom is held (such as a secondary friction brake or a ratchet and pawl device).</p> <p>(2) Hydraulic drums must have an integrally mounted holding device or internal static brake to prevent boom hoist movement in the event of hydraulic failure.</p> <p>(3) Neither clutches nor hydraulic motors must be considered brake or locking devices for purposes of this subpart.</p> <p>(4) Hydraulic boom cylinders must have an integrally mounted holding device.</p>	<p><u>(b) Preventing boom free fall (Controlled Load Lowering). Where the use of equipment with a boom that is configured to free fall (live boom) is prohibited, the boom shall have a secondary mechanism or device designed to prevent the boom free fall in the event the primary system used to hold or regulate the boom hoist fails, as follows:</u></p> <p><u>(1) Friction drums shall have:</u></p> <p><u>(A) A friction clutch and a braking device to allow for controlled boom lowering.</u></p> <p><u>(B) A secondary braking or locking device, which is manually or automatically engaged, to back-up the primary brake while the boom is held (such as a secondary friction brake or a ratchet and pawl device).</u></p> <p><u>(2) Hydraulic drums shall have an integrally mounted holding device or internal static brake to prevent hoist movement in the event of hydraulic failure.</u></p> <p><u>(3) Neither clutches nor hydraulic motors shall be considered as a brake or locking device for purposes of this section.</u></p> <p><u>(4) Hydraulic boom hoist cylinders shall have an integrally mounted holding device.</u></p>	<p>Clarification added.</p>
<p>(c) Preventing uncontrolled retraction.</p>	<p>§4949(d) On a telescoping boom, the retract</p>	<p>State verbiage is functionally equivalent to</p>

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<p>Hydraulic telescoping booms must have an integrally mounted holding device to prevent the boom from retracting in the event of hydraulic failure.</p>	<p>function shall be capable of controlling 110% of rated load. A holding device (such as load check) shall be provided.</p>	<p>federal.</p>
<p>(d) Load line free fall. In each of the following circumstances, controlled load lowering is required and free fall of the load line hoist is prohibited:</p> <p>(1) An employee is directly under the load. (2) An employee is being hoisted. (3) The load is directly over a power line, or over any part of the area extending the Table A of § 1926.1408 clearance distance to each side of the power line; or any part of the area extending the Table A of § 1926.1408 clearance distance to each side of the power line is within the radius of vertical travel of the load.</p> <p>(4) The load is over a shaft. (5) The load is over a cofferdam, except where there are no employees in the fall zone of the load.</p>	<p><u>(c) Load line free fall prohibitions. In each of the following circumstances, controlled load lowering is required and free fall of the load line hoist is prohibited:</u></p> <p><u>(1) An employee is in the fall zone of the load.</u> <u>(2) An employee is being hoisted.</u> <u>(3) The load or boom is directly over a power line, or over any part of the area extending the Table A of Section 5003.1 clearance distance to each side of the power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the boom or the load.</u> <u>NOTE TO (c)(3): Operations in proximity to overhead lines are also subject to Section 2946.</u> <u>(4) The load is over a shaft.</u> <u>(5) The load is over a cofferdam, except where there are no employees in the fall zone of the load.</u> <u>(6) Lifting operations are taking place in a refinery or tank farm.</u></p>	<p>Prohibited conditions are copied from Section 4928.1(a) – add subsection (6).</p>
<p>§ 1926.1427 Operator qualification and certification.</p>	<p>§5006. Crane and Hoisting Equipment Operators – Qualifications.</p>	
	<p style="text-align: center;">***</p> <p>EXCEPTION: Mobile and tower cranes regulated by Section 5006.1.</p>	
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non-construction).</p>	<p>§5006.1. Mobile Crane and Tower Crane-Operator Qualifications and Certification (Applicable to Cranes in General Industry Only).</p>	<p><u>Master Rationale For Section 5006.1:</u> Please note, the federal crane operator certification standard applies to construction only. Section 5006.1 is strictly a general industry crane</p>

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<p>Where applicable, cross references to the comparable federal standard to the State's proposed amended language shown in the center column have been listed for reference in the columns below.</p>		<p>standard and Section 5006.2 is strictly a construction industry crane standard which proposes to incorporate the latest Federal Crane Operator Certification requirements. Consequently, for the purposes of this portion of the side-by-side, only those Section 5006.1 standards that are proposed to be amended based on federal language will be displayed with rationales.</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non-construction).</p>	<p>§5006.1. Mobile Crane and Tower Crane-Operator Qualifications and Certification (<u>Applicable to Cranes in General Industry Only</u>).</p> <p>(a) Qualifications. The employer shall only permit operators who have a valid certificate of competency (certificate) issued in accordance with this section by an Accredited Certifying Entity for the type of crane to be used to operate a crane covered by this section. Certificates shall be issued to operators who:</p> <p>(1) Pass a physical examination conducted by a <u>physician or other licensed health care professional (e.g. physician's assistant or nurse practitioner)</u> which at a minimum shall include the examination criteria specified in the American Society of Mechanical Engineers (ASME) B30.5-2000 standard, Chapter 5-3.1.2(a)(1-5, 7, 8) or the U.S. Department of Transportation (US DOT) physical examination requirements contained in 49 CFR Sections 391.41 through 391.49.</p>	<p>California proposes to amend Section 5006.1 title to clearly indicate to the employer that it applies specifically to cranes used in general industry.</p> <p>Since California has separate crane operator standards for general industry (fed OSHA does not) and for the construction industry; the state is more stringent than federal OSHA for this issue.</p> <p>The State proposes to clarify at the request of the Standards Board that the physical can be administered by other licensed health care professionals.</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non-construction).</p>	<p>(2) Pass a substance abuse test. The level of testing shall be consistent with the standard practice for the industry where the crane is in use and this test shall be conducted by a</p>	<p>The State proposes to clarify as recommended in stakeholder comment, that the written examination is developed, validated and administered in more performance terms</p>

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<p>See .1427 (c)(1)(ii)</p>	<p>recognized laboratory service; (3) Pass a written examination developed, validated, and administered in accordance with <u>generally accepted industry best practices</u>the Standards for Educational and Psychological Testing (Copyright 1999) published jointly by the Joint Committee of the American Educational Research Association, the American Psychological Association, and the National Council in Measurement in Education. The exam shall test knowledge and skills identified as necessary for safe crane operations and shall, at a minimum, <u>demonstrate</u>include the following:</p>	<p>“generally accepted industry best practices.” This move away from the existing specification will provide employers with the flexibility they need to ensure crane operators are tested to the latest state of the art testing standards rather than one that dates back to 1999. This proposed language is commensurate with .1427(c)(1)(ii).</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non- construction).</p>	<p>(A) operational characteristics and controls, including characteristic and performance questions appropriate to the crane type for which qualification is sought; (B) emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction; (C) a demonstration of basic arithmetic skills necessary for crane operation and the ability to read and comprehend the crane manufacturer's operation and maintenance instruction materials, including load capacity information (load charts) for the crane for which certification is sought;</p>	<p>Refer to master rationale.</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to</p>	<p>(D) <u>technical knowledge of the subject matter criteria listed in 29 CFR 1926,</u></p>	<p>California proposes to require the operator of a crane to demonstrate technical knowledge of</p>

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<p>general industry (non- construction).</p>	<p><u>Subpart CC, Appendix C (Incorporated by Reference) applicable to the specific type of equipment the individual will operate. Use of the Appendix C criteria meets the requirements of this provision</u>knowledge of chapters 5-0 through 5-3 of The American Society of Mechanical Engineers (ASME) B30.5-2000 and B30.5a-2002 Addenda to the standard for mobile and locomotive cranes or chapters 4-0 through 4-3 of the ASME B30.4-1996 standard for portal, tower, and pedestal cranes or Chapter 3-3 of the ASME B-30.3-1996 standard for Construction Tower Cranes, depending on the type of crane(s) the operator intends to operate.</p> <p><u>(E) technical knowledge applicable to:</u></p> <ol style="list-style-type: none"> <u>1. The suitability of the supporting ground and surface to handle expected loads.</u> <u>2. Site hazards.</u> <u>3. Site access.</u> 	<p>subject matter contained in the federal construction industry certification standard, Subpart CC, Appendix C, which is incorporated by reference, applicable to the type of equipment the operate will operate. The State also proposes to specify in (E) the subject matter areas of the required technical knowledge based on the Federal Appendix C.</p>
<p>(1) When a non-military government entity issues operator licenses for equipment covered under subpart CC, and that government licensing program meets the requirements of paragraphs (e)(2) and (j) of this section, the equipment operator must either be: (i) Licensed by that government entity for operation of equipment within that entity's jurisdiction; or</p>		<p>See Section 5006.2(e) Option 2.</p>
<p>(3) Exceptions: Operator qualification or certification under this section is not required for operators of derricks (see § 1926.1436), sideboom cranes (see § 1926.1440), or equipment with a maximum manufacturer-rated</p>		<p>See Exception (1) to Section 5006.2.</p>

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<p>hoisting/lifting capacity of 2,000 pounds or less (see § 1926.1441).</p>		
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non-construction).</p> <p>See .1427(d)(1)(i)</p>	<p>§5006.1(c) Accredited Certifying Entity. <u>The crane operator testing organization providing the certification shall be accredited by an approved nationally recognized accrediting agency based on that agency's determination that industry-recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment, and personnel have been met.</u></p> <p><u>(1) The accredited certifying entity shall have its accreditation reviewed by the nationally recognized accrediting agency at least every three years.</u></p>	<p>California proposes to amend Section 5006.1 to include language contained in the Federal .1427(d)(1)(i) to ensure the testing organization meets the highest standards for testing integrity.</p> <p>California proposes to enhance Section 5006.1 accrediting entity requirements by incorporating the Federal construction standard contained in .1427(d)(1)(v).</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non-construction).</p>	<p>§5006.1(d) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (a). Operators with at least one-thousand (1,000) hours of documented experience operating the specific type of crane for which re-certification is sought as covered by this section during the immediately preceding certification period and who meet the physical examination, substance abuse, and written examination requirements set forth in subsections (a)(1), (a)(2) and (a)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (a)(4) to re-certify.</p>	<p>See master rationale.</p>
<p>(4) A certification issued under this paragraph is valid for 5 years.</p>	<p>§5006.1(b) Certification. Certificates shall be valid for a maximum of five (5) years. An</p>	<p>California proposes to require the certifying entity to have procedures for operators to</p>

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	<p>Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in (a)(1)-(4) of this section.</p> <p><u>(1) The accredited certifying entity shall have procedures for operators to re-apply and be re-tested in the event an operator applicant fails a test or is decertified.</u></p>	<p>reapply and retest in the event the operator fails the test.</p>
<p>(e) Option (4): Licensing by a government entity.</p> <p>(1) For purposes of this section, a government licensing department/office that issues operator licenses for operating equipment covered by this standard is considered a government accredited crane operator testing organization if the criteria in paragraph (e)(2) of this section are met.</p> <p>(2) Licensing criteria.</p> <p>(i) The requirements for obtaining the license include an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.</p>		<p>See Section 5006.2(e) Option 2.</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non- construction).</p>	<p>§5006.1(d) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (a). Operators with at least one-thousand (1,000) hours of documented experience operating the specific type of crane for which re-certification is sought as covered by this section during the immediately preceding certification period and who meet the physical examination, substance abuse, and written examination requirements set forth in</p>	<p>See master rationale for Section 5006.1.</p>

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	<p>subsections (a)(1), (a)(2) and (a)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (a)(4) to re-certify.</p>	
<p>(3) A license issued by a government accredited crane operator testing organization that meets the requirements of this option: (i) Meets the operator qualification requirements of this section for operation of equipment only within the jurisdiction of the government entity. (ii) Is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.</p>		<p>California proposes to delete this general industry crane operator certification exception. See Section 5006.2(e) Option 2.</p>
<p>Federal OSHA does not have crane operator certification standards that apply specifically to general industry (non- construction). See .1427(b)(3)(i)(ii)(iii)(iv)(v)</p>	<p>§5006.1(e) Trainees may be authorized to operate mobile or tower cranes provided they are under the direct supervision of an operator possessing a valid certificate of competency for the type of crane operated by the trainee. The term direct supervision means the supervising operator is in the immediate area of the trainee and within visual sighting distance and able to effectively communicate with the trainee. When performing direct supervision, the supervising operator shall have no other duties other than to observe the operation of the crane by the trainee. <u>(1) The operator-in-training shall not operate the equipment in any of the following circumstances unless the exception stated in subsection (e)(1)(E) is applicable:</u> <u>(A) If any part of the equipment, load line or load (including rigging and lifting accessories), is operated up to the</u></p>	<p>California proposes to amend subsection 5006.1(e) to incorporate Federal language from .1427(b)(3)(i)(ii)(iii)(iv)(v).</p>

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	<p><u>equipment's maximum working radius in the work zone [see Section 5003.1(a)(1)], could get within 20 feet of a power line that is up to 350kV, or within 50 feet of a power line that is over 350kV.</u></p> <p><u>(B) If the equipment is used to hoist personnel.</u></p> <p><u>(C) In multiple-equipment lifts.</u></p> <p><u>(D) If the equipment is used over a shaft, cofferdam, or in a tank farm.</u></p> <p><u>(E) In multiple-lift rigging operations, except where the operator's trainer determines that the operator-in-training skills are sufficient for this high-skill work.</u></p>	
<p>2. Revise § 1926.1427 to read as follows:</p>		
<p>§ 1926.1427 Operator training, certification, and evaluation.</p>	<p><u>§5006.2. Operator Training, Certification, and Evaluation for Cranes and Derricks in Construction.</u></p>	
<p>(a) General requirements for operators. The employer must ensure that each operator is trained, certified/licensed, and evaluated in accordance with this section before operating any equipment covered under subpart CC, except for the equipment listed in paragraph (a)(2) of this section.</p>	<p><u>(a) General requirements for operators. The employer shall ensure that each operator is trained, certified/licensed, and evaluated in accordance with this section, prior to operating any equipment covered under this Group 13, or the person is operating the equipment during a training period as an operator-in-training in accordance with subsection (b).</u></p>	<p>Generally, text from 1618.1 (as adopted for the operator qualification and evaluation update) will be copied to 5006.2 for the consolidation (with modifications as required by the relocation). Exceptions listed in fed subsection (a)(2) are shown in the 2nd row below.</p>
<p>(1) Operation during training. An employee who has not been certified/licensed and evaluated to operate assigned equipment in accordance with this section may only operate the equipment as an operator-in-training under supervision in accordance with the requirements of paragraph (b) of this section.</p>		<p>Supervision of operators-in-training is covered in subsection (b).</p>
<p>(2) Exceptions. Operators of derricks (see §</p>	<p><u>EXCEPTIONS TO SECTION 5006.2:</u></p>	

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<p>1926.1436), sideboom cranes (see § 1926.1440), or equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 pounds or less (see § 1926.1441) are not required to comply with § 1926.1427. Note: The training requirements in those other sections continue to apply (for the training requirement for operators of sideboom cranes, follow section 1926.1430(c)).</p>	<p><u>(1) Operators of derricks and sideboom cranes, or equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 pounds or less are not required to comply with this section. Note: The training and qualification requirements of Section 5006 will continue to apply in those cases.</u></p>	
<p>(3) Qualification by the U.S. military. (i) For purposes of this section, an operator who is an employee of the U.S. military meets the requirements of this section if he/she has a current operator qualification issued by the U.S. military for operation of the equipment. An employee of the U.S. military is a Federal employee of the Department of Defense or Armed Forces and does not include employees of private contractors. (ii) A qualification under this paragraph is: (A) Not portable: Such a qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification. (B) Valid for the period of time stipulated by the issuing entity.</p>		<p>§1926.1427(a)(3) is not applicable. CA does not have jurisdiction over work conducted on military installations.</p>
<p>(b) Operator training. The employer must provide each operator-in-training with sufficient training, through a combination of formal and practical instruction, to ensure that the operator-in-training develops the skills, knowledge, and ability to recognize and avert risk necessary to operate the equipment safely for assigned work.</p>	<p><u>(b) Operator training. The employer shall provide each operator-in-training with sufficient training, through a combination of formal and practical instruction, prior to operating the equipment to enable the operator-in training to operate the equipment safely under limitations established by this section and any additional limitations established by the</u></p>	

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	<u>employer.</u>	
(1) The employer must provide instruction on the knowledge and skills listed in paragraphs (j)(1) and (2) of this section to the operator-in-training.	<u>(1) The employer shall provide instruction on the knowledge and skills listed in subsection (g) of this section to the operator-in-training.</u>	
(2) The operator-in-training must be continuously monitored on site by a trainer while operating equipment.	<u>(2) The operator-in-training shall be continuously monitored on site by a trainer while operating equipment.</u>	
(3) The employer may only assign tasks within the operator-in-training's ability. However, except as provided in paragraph (b)(3)(v) of this section, the operator-in-training shall not operate the equipment in any of the following circumstances unless certified in accordance with paragraph (c) of this section:	<u>(3) The employer may only assign tasks within the operator-in-training's ability. However, except as provided in subsection (b)(3)(E) of this section, the operator-in-training shall not operate the equipment in any of the following circumstances unless certified in accordance with subsection (c):</u>	
(i) If any part of the equipment, load line, or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone (see § 1926.1408(a)(1)), could get within 20 feet of a power line that is up to 350 kV, or within 50 feet of a power line that is over 350 kV.	<u>(A) If any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone [see Section 5003.1(a)(1)], could get within 20 feet of a power line that is up to 350 kV, or within 50 feet of a power line that is over 350 kV.</u>	
(ii) If the equipment is used to hoist personnel.	<u>(B) If the equipment is used to hoist personnel.</u>	
(iii) In multiple-equipment lifts.	<u>(C) In multiple-equipment lifts.</u>	
(iv) If the equipment is used over a shaft, cofferdam, or in a tank farm.	<u>(D) If the equipment is used over a shaft, cofferdam, or in a tank farm.</u>	
(v) In multiple-lift rigging operations, except where the operator's trainer determines that the operator-in-training's skills are sufficient for this high-skill work.	<u>(E) In multiple-lift rigging operations, except where the operator's trainer determines that the operator-in-training skills are sufficient for this high-skill work.</u>	
(4) The employer must ensure that an operator-in-training is monitored as follows when operating equipment covered by this subpart:	<u>(4) The employer shall ensure that an employee who is not qualified or certified under this section is permitted to operate equipment only as an operator-in-training and is monitored as follows when operating equipment covered by</u>	

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	<u>this Group 13.</u>	
(i) While operating the equipment, the operator-in-training must be continuously monitored by an individual (“operator’s trainer”) who meets all of the following requirements:	<u>(A) Trainees may be authorized to operate equipment provided they are under the direct supervision of an individual (“operator’s trainer”) who meets all of the following requirements:</u>	
	<u>1. The term direct supervision means the supervising individual (“operator’s trainer”) is in the immediate area of the trainee and within visual sighting distance and able to effectively communicate with the trainee. When performing direct supervision, the supervising operator shall have no other duties other than to observe the operation of the crane by the trainee.</u>	
(A) The operator’s trainer is an employee or agent of the operator-in-training’s employer.	<u>2. The operator's trainer shall be an employee or agent of the operator-in-training's employer.</u>	
(B) The operator’s trainer has the knowledge, training, and experience necessary to direct the operator-in-training on the equipment in use.	<u>3. The operator’s trainer has the knowledge, training and experience necessary to direct the operator-in-training on the equipment in use and possesses a valid certificate of competency for the type of crane operated by the trainee.</u>	
(ii) While monitoring the operator-in-training, the operator’s trainer performs no tasks that detract from the trainer’s ability to monitor the operator-in-training.	<u>(b)(4)(A)1... When performing direct supervision, the operator’s trainer shall have no other duties other than to observe the operation of the crane by the trainee.</u>	
(iii) For equipment other than tower cranes: The operator’s trainer and the operator-in-training must be in direct line of sight of each other. In addition, they must communicate verbally or by hand signals. For tower cranes: The operator’s trainer and the operator-in-training must be in direct communication with each other.	<u>(B) For equipment other than tower cranes: The operator's trainer and the operator-in-training shall be in direct line of sight of each other. In addition, they shall communicate verbally or by hand signals. For tower cranes: The operator's trainer and the operator-in-training shall be in direct communication with each other.</u>	
(iv) The operator-in-training must be monitored		State does not permit the operator-in-training to

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<p>by the operator’s trainer at all times, except for short breaks where all of the following are met: (A) The break lasts no longer than 15 minutes and there is no more than one break per hour. (B) Immediately prior to the break the operator’s trainer informs the operator-in-training of the specific tasks that the operator-in-training is to perform and limitations to which he/she must adhere during the operator trainer’s break. (C) The specific tasks that the operator-in-training will perform during the operator trainer’s break are within the operator-in-training’s abilities.</p>		<p>operate the equipment while the trainer is on break.</p>
<p>(5) Retraining. The employer must provide retraining in relevant topics for each operator when, based on the performance of the operator or an evaluation of the operator’s knowledge, there is an indication that retraining is necessary.</p>	<p><u>(5) Retraining. The employer shall provide retraining in relevant topics for each operator when, based on the performance of the operator or an evaluation of the operator’s knowledge, there is an indication that retraining is necessary.</u></p>	
<p>(c) Operator certification and licensing. The employer must ensure that each operator is certified or licensed to operate the equipment as follows:</p>	<p><u>(c) Operator certification and licensing. The employer shall ensure that each operator is certified or licensed to operate the equipment in accordance with subsection (d) Option 1, or (e) Option 2 as follows.</u></p>	
<p>(1) Licensing. When a state or local government issues operator licenses for equipment covered under subpart CC, the equipment operator must be licensed by that government entity for operation of equipment within that entity’s jurisdiction if that government licensing program meets the following requirements:</p>	<p><u>(e) Option 2: Licensing by a government entity.</u> <u>(1) For purposes of this section, a government licensing department/office that issues operator licenses for operating equipment covered by this Group 13 is considered a government accredited crane operator testing organization if the criteria in subsection (e)(2) are met.</u></p>	
<p>(i) The requirements for obtaining the license</p>	<p><u>(2) Licensing criteria.</u></p>	<p>State requires physical exam and substance</p>

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<p>include an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.</p>	<p><u>(A) The requirements for obtaining the license include passing a physical examination and a substance abuse test as prescribed in subsections (g)(1) and (g)(2) and an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in subsections (g)(3) and (g)(4).</u></p>	<p>abuse testing in addition to written and practical testing.</p>
<p>(ii) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment, and personnel.</p>	<p><u>(B) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel.</u></p>	
<p>(iii) The government authority that oversees the licensing department/office has determined that the requirements in paragraphs (c)(1)(i) and (ii) of this section have been met.</p>	<p><u>(C) The government authority that oversees the licensing department/office, has determined that the requirements in subsections (e)(2)(A) and (B) have been met.</u></p>	
<p>(iv) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.</p>	<p><u>(D) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the requirements in subsection (g).</u></p>	<p>State section (g) is more protective than fed requirements.</p>
<p>(v) For the purposes of compliance with this section, a license is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.</p>	<p><u>3. A license issued by a government accredited crane operator testing organization that meets the requirements of this option:</u> <u>(A) Meets the operator qualification requirements of this section for operation of equipment only within the jurisdiction of the government entity.</u> <u>(B) Is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.</u></p>	<p>State limits this option to within the jurisdiction of the government entity.</p>
<p>(2) Certification. When an operator is not required to be licensed under paragraph (c)(1) of this section, the operator must be certified in accordance with paragraph (d) or (e) of this</p>	<p><u>(c) Operator certification and licensing. The employer shall ensure that each operator is certified or licensed to operate the equipment in accordance with subsection (d) Option 1, or (e)</u></p>	

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section.	<u>Option 2 as follows.</u>	
(3) No cost to employees. Whenever operator certification/licensure is required under this section, the employer must provide the certification/licensure at no cost to employees.	<u>(c)(1) Whenever operator certification or licensure is required under this section, the employer shall provide the certification or licensure at no cost to employees.</u>	
(4) Provision of testing and training. A testing entity is permitted to provide training as well as testing services as long as the criteria of the applicable governmental or accrediting agency (in the option selected) for an organization providing both services are met.		This option not permitted in CA.
(d) Certification by an accredited crane operator testing organization.	<u>(d) Option (1): Certification by an accredited crane operator certifying entity.</u>	
(1) For a certification to satisfy the requirements of this section, the crane operator testing organization providing the certification must: (i) Be accredited by a nationally recognized accrediting agency based on that agency's determination that industry-recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment, and personnel have been met.	<u>(d)(2) For a certification to satisfy the requirements of this option, the crane operator testing organization providing the certification shall be accredited by an approved nationally recognized accrediting agency based on that agency's determination that industry-recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment, and personnel have been met.</u>	CA certification requirements for accredited certifying entity are more specific.
(ii) Administer written and practical tests that: (A) Assess the operator applicant regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.	<u>(d)(1) ...An Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in subsection (g).</u>	
(B) Provide certification based on equipment type, or type and capacity.	<u>(d)(1)(A) An operator will be deemed qualified to operate a particular piece of equipment if the operator is certified under this subsection for that type, or type and capacity of equipment...</u>	
(iii) Have procedures for operators to re-apply and be re-tested in the event an operator applicant fails a test or is decertified.	<u>(d)(4) The accredited certifying entity shall have procedures for operators to re-apply and be re-tested in the event an operator applicant</u>	

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	<u>fails a test or is decertified.</u>	
(iv) Have testing procedures for recertification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.	<u>(d)(3) Re-certification. Crane operators shall re-certify every five (5) years and shall be required to meet all of the qualifications set forth in subsection (d)(1).</u>	
(v) Have its accreditation reviewed by the nationally recognized accrediting agency at least every 3 years.	<u>(d)(2)(A) The accredited certifying entity shall have its accreditation reviewed by the nationally recognized accrediting agency at least every three (3) years.</u>	
(2) If no accredited testing agency offers certification examinations for a particular type of equipment, an operator will be deemed to have complied with the certification requirements of this section for that equipment if the operator has been certified for the type that is most similar to that equipment and for which a certification examination is available. The operator's certificate must state the type of equipment for which the operator is certified.	<u>(d)(1)(A)...If no accredited testing agency offers certification examinations for a particular type of equipment, an operator will be deemed to have complied with the certification requirements for this section for that equipment if the operator has been certified for the type that is most similar to that equipment and for which a certification examination is available. The operator's certificate shall state the type of equipment for which the operator is certified.</u>	
(3) A certification issued under this option is portable among employers who are required to have operators certified under this option.	<u>(d)(1)(B) A certification issued under this option (Option 1) is portable and meets the requirements of subsection (a)(2).</u>	
(4) A certification issued under this paragraph is valid for 5 years.	<u>(d)(1) Certification. Certificates shall be valid for a maximum of five (5) years...</u>	
(e) Audited employer program. The employer's certification of its employee must meet the following requirements:		The audited employer program certification option is not permitted in CA.
(1) Testing. The written and practical tests must be either:		
(i) Developed by an accredited crane operator testing organization (see paragraph (d) of this section); or		
(ii) Approved by an auditor in accordance with the following requirements:		

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(A) The auditor is certified to evaluate such tests by an accredited crane operator testing organization (see paragraph (d) of this section).		
(B) The auditor is not an employee of the employer.		
(C) The approval must be based on the auditor's determination that the written and practical tests meet nationally recognized test development criteria and are valid and reliable in assessing the operator applicants regarding, at a minimum, the knowledge and skills listed in paragraphs (j)(1) and (2) of this section.		
(D) The audit must be conducted in accordance with nationally recognized auditing standards.		
(2) Administration of tests. (i) The written and practical tests must be administered under circumstances approved by the auditor as meeting nationally recognized test administration standards.		
(ii) The auditor must be certified to evaluate the administration of the written and practical tests by an accredited crane operator testing organization (see paragraph (d) of this section).		
(iii) The auditor must not be an employee of the employer.		
(iv) The audit must be conducted in accordance with nationally recognized auditing standards.		
(3) Timing of audit. The employer program must be audited within 3 months of the beginning of the program and at least every 3 years thereafter.		
(4) Requalification. The employer program must have testing procedures for re-qualification designed to ensure that the operator continues to meet the technical		

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<p>knowledge and skills requirements in paragraphs (j)(1) and (2) of this section. The re-qualification procedures must be audited in accordance with paragraphs (e)(1) and (2) of this section.</p>		
<p>(5) Deficiencies. If the auditor determines that there is a significant deficiency (“deficiency”) in the program, the employer must ensure that: (i) No operator is qualified until the auditor confirms that the deficiency has been corrected.</p>		
<p>(ii) The program is audited again within 180 days of the confirmation that the deficiency was corrected.</p>		
<p>(iii) The auditor files a documented report of the deficiency to the appropriate Regional Office of the Occupational Safety and Health Administration within 15 days of the auditor’s determination that there is a deficiency.</p>		
<p>(iv) Records of the audits of the employer’s program are maintained by the auditor for 3 years and are made available by the auditor to the Secretary of Labor or the Secretary’s designated representative upon request.</p>		
<p>(6) Audited-program certificates. A certification under this paragraph is: (i) Not portable: Such a certification meets the requirements of paragraph (c) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the certification. (ii) Valid for 5 years.</p>		
<p>(f) Evaluation. (1) Through an evaluation, the employer must ensure that each operator is qualified by a demonstration of:</p>	<p><u>(f) Evaluation.</u> <u>(1) The employer shall ensure through an evaluation that each operator is qualified by a demonstration of:</u></p>	

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<p>(i) The skills and knowledge, as well as the ability to recognize and avert risk, necessary to operate the equipment safely, including those specific to the safety devices, operational aids, software, and the size and configuration of the equipment. Size and configuration includes, but is not limited to, lifting capacity, boom length, attachments, luffing jib, and counterweight set-up.</p>	<p><u>(A) The skills and knowledge, as well as the ability to recognize and avert risk, necessary to operate the equipment safely, including those specific to the safety devices, operational aids, software, and the size and configuration of the equipment. Size and configuration includes, but is not limited to, lifting capacity, boom length, attachments, luffing jib, and counterweight set-up.</u></p>	
<p>(ii) The ability to perform the hoisting activities required for assigned work, including, if applicable, blind lifts, personnel hoisting, and multi-crane lifts.</p>	<p><u>(B) The ability to perform the hoisting activities required for assigned work, including, if applicable, blind lifts, personnel hoisting, and multi-crane lifts.</u></p>	
<p>(2) For operators employed prior to December 10, 2018, the employer may rely on its previous assessments of the operator in lieu of conducting a new evaluation of that operator’s existing knowledge and skills.</p>	<p><u>(2) For operators employed prior to April 6, 2020, the employer may rely on its previous assessments of the operator in lieu of conducting a new evaluation of that operator’s existing knowledge and skills.</u></p>	
<p>(3) The definition of “qualified” in § 1926.32 does not apply to paragraph (f)(1) of this section: Possession of a certificate or degree cannot, by itself, cause a person to be qualified for purposes of paragraph (f)(1).</p>		<p>Section 1504 definition of qualified person includes training and experience (more protective than 1926.32). Furthermore, (f)(1) spells-out that qualifications must be demonstrated, so this subsection is redundant.</p>
<p>(4) The evaluation required under paragraph (f)(1) of this section must be conducted by an individual who has the knowledge, training, and experience necessary to assess equipment operators.</p>	<p><u>(3) The evaluation required under subsection (f)(1) shall be conducted by an individual who has the knowledge, training, and experience necessary to assess equipment operators.</u></p>	
<p>(5) The evaluator must be an employee or agent of the employer. Employers that assign evaluations to an agent retain the duty to ensure that the requirements in paragraph (f) are satisfied. Once the evaluation is completed successfully, the employer may allow the operator to operate</p>	<p><u>(4) The evaluator shall be an employee or agent of the employer. Employers that assign evaluations to an agent retain the duty to ensure that the requirements in subsection (f) are satisfied. Once the evaluation is completed successfully, the employer may allow the operator to operate other equipment that the</u></p>	

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<p>other equipment that the employer can demonstrate does not require substantially different skills, knowledge, or ability to recognize and avert risk to operate.</p>	<p><u>employer can demonstrate does not require substantially different skills, knowledge, or ability to recognize and avert risk to operate.</u></p>	
<p>(6) The employer must document the completion of the evaluation. This document must provide: The operator’s name; the evaluator’s name and signature; the date; and the make, model, and configuration of equipment used in the evaluation. The employer must make the document available at the worksite while the operator is employed by the employer. For operators assessed per paragraph (f)(2) of this section, the documentation must reflect the date of the employer’s determination of the operator’s abilities and the make, model and configuration of equipment on which the operator has previously demonstrated competency.</p>	<p><u>(5) The employer shall document the completion of the evaluation. This document shall provide: The operator’s name; the evaluator’s name and signature; the date; and the make, model, and configuration of equipment used in the evaluation. The employer shall make the document available at the worksite while the operator is employed by the employer. For operators assessed per subsection (f)(2), the documentation shall reflect the date of the employer’s determination of the operator’s abilities and the make, model and configuration of equipment on which the operator has previously demonstrated competency.</u></p>	
<p>(7) When an employer is required to provide an operator with retraining under paragraph (b)(5) of this section, the employer must re-evaluate the operator with respect to the subject of the retraining. (g) [Reserved].</p>	<p><u>(6) When an employer is required to provide an operator with retraining under subsection (b)(5), the employer shall re-evaluate the operator with respect to the subject of the retraining upon completion.</u></p>	
<p>(h) Language and literacy requirements. (1) Tests under this section may be administered verbally, with answers given verbally, where the operator candidate:</p>		<p>Written tests are required in CA.</p>
<p>(i) Passes a written demonstration of literacy relevant to the work.</p>		
<p>(ii) Demonstrates the ability to use the type of written manufacturer procedures applicable to the class/type of equipment for which the candidate is seeking certification.</p>		

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<p>(2) Tests under this section may be administered in any language the operator candidate understands, and the operator’s certification documentation must note the language in which the test was given. The operator is only permitted to operate equipment that is furnished with materials required by this subpart, such as operations manuals and load charts, that are written in the language of the certification. (i) [Reserved].</p>		
<p>(j) Certification criteria. Certifications must be based on the following:</p>	<p><u>(g) Certification criteria. The employer shall only permit operators who have a valid certificate of competency (certificate) issued in accordance with this section by an Accredited Certifying Entity for the type of crane to be used to operate a crane covered by this Group 13. Certificates shall be issued to operators who:</u></p>	
	<p><u>(1) Pass a physical examination conducted by a physician or other licensed health care professional (e.g. physician’s assistant or nurse practitioner) ...</u></p>	<p>Physical exam is not required by fed. (Using CA text which is more protective).</p>
	<p><u>(2) Pass a substance abuse test...</u></p>	<p>Substance abuse test not require by fed. (Using CA text which is more protective).</p>
<p>(1) A determination through a written test that:</p>	<p><u>(3) Pass a written examination developed, validated, and administered in accordance with generally accepted industry best practices. The exam shall test knowledge and skills identified as necessary for safe crane operations and shall, at a minimum, demonstrate the following:</u></p>	<p>Fed verbiage modified with CA text which is more specific about the written test.</p>
<p>(i) The individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including all of the following:</p>	<p><u>(A) The individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including all of the following:</u></p>	
<p>(A) The controls and operational/performance</p>	<p><u>1. The controls and operational/performance</u></p>	

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characteristics.	<u>characteristics.</u>	
	<u>2. Emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;</u>	Additional CA certification requirement (from existing text).
(B) Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.	<u>3. Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.</u>	
(C) Procedures for preventing and responding to power line contact.	<u>4. Procedures for preventing and responding to power line contact.</u>	
(D) Technical knowledge of the subject matter criteria listed in appendix C of this subpart applicable to the specific type of equipment the individual will operate. Use of the appendix C criteria meets the requirements of this provision.	<u>5. Technical knowledge of the subject matter criteria listed in 29 CFR 1926, Subpart CC, Appendix C, applicable to the specific type of equipment the individual will operate. Use of the Appendix C criteria meets the requirements of this provision.</u>	
(E) Technical knowledge applicable to the suitability of the supporting ground and surface to handle expected loads, site hazards, and site access.	<u>6. Technical knowledge applicable to the suitability of the supporting ground and surface to handle expected loads, site hazards, and site access.</u>	
(F) This subpart, including applicable incorporated materials.	<u>7. This Group 13, including applicable incorporated materials.</u>	
(ii) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in paragraph (j)(1)(i) of this section.	<u>(B) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in subsection (g)(3)(A).</u>	
(2) A determination through a practical test that the individual has the skills necessary for safe operation of the equipment, including the following: (i) Ability to recognize, from visual and auditory observation, the items listed in §1926.1412(d) (shift inspection).	<u>(4) Pass a “hands-on” examination to demonstrate proficiency in operating the specific type of crane, which at a minimum shall include the following: (A) Ability to recognize, from visual and auditory observation, the items listed in Section 5031 (shift inspection).</u>	
(ii) Operational and maneuvering skills.	<u>(B) Operational and maneuvering skills.</u>	
(iii) Application of load chart information.	<u>(C) Application of load chart information.</u>	

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(iv) Application of safe shut-down and securing procedures.	<u>(D) Application of safe shut-down and securing procedures.</u>	
	<u>(h) Reciprocity. Operators trained, certified under Option 1, evaluated, and certified under this Section 5006.2, are qualified to work on projects in construction and in general industry.</u>	California only allows operators to become certified under the provisions of Option 1, by an accredited crane certifying agency. When option one is utilized California deems operators qualified to be able to handle both General Industry and Construction crane operations. There is no Federal counterpart.
(k) Effective dates. (1) Apart from the evaluation and documentation requirements in paragraphs (a) and (f), this section is effective on December 10, 2018. (2) The evaluation and documentation requirements in paragraphs (a) and (f) are effective on February 7, 2019.	<u>(i) Effective date. This section is effective on April 6, 2020.</u>	This RM merely consolidates requirements from CSO Art. 15 into the GISO, so all the referenced requirements should already be effective.
<ul style="list-style-type: none"> ■ 3. Amend § 1926.1430 by: ■ a. Revising paragraphs (c)(1) and (2); ■ b. Removing paragraph (c)(3); and ■ c. Redesignating paragraph (c)(4) as paragraph (c)(3). The revisions read as follows:		
§ 1926.1430 Training. * * * * * (c) * * *	<u>§ 5012 Training– Supplemental Requirements for Cranes in Construction.</u> <u>(a) Operators.</u>	
(1) The employer must train each operator in accordance with § 1926.1427(a) and (b), on the safe operation of the equipment the operator will be using.	<u>The employer shall train each operator in accordance with §5006.2(a) and (b), on the safe operation of the equipment the operator will be using.</u>	
(2). The employer must train each operator covered under the exception of §1926.1427(a)(2) on the safe operation of the	§5006. Crane and Hoisting Equipment Operators - Qualifications. (a) Only employees authorized by the employer	1926.1427(a)(2) was not adopted by CA; however, Section 5006(a) provides equivalent safety.

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equipment the operator will be using.	and trained in the safe operation of cranes or hoisting apparatus shall be permitted to operate such equipment.	

§ 1926.1428 Signal person qualifications.	<u>§5001.3. Signal Person Qualifications – Supplemental Requirements for Cranes and Derricks in Construction.</u>	
(a) The employer of the signal person must ensure that each signal person meets the Qualification Requirements (paragraph (c) of this section) prior to giving any signals. This requirement must be met by using either Option (1) or Option (2) of this section.	<u>(a) The employer of the signal person shall ensure that each signal person meets the qualification requirements [subsection (c)] prior to giving any signals. This requirement shall be met by using either Option (1) or Option (2) of this section.</u>	
(1) Option (1)—Third party qualified evaluator. The signal person has documentation from a third party qualified evaluator (see Qualified Evaluator (third party), § 1926.1401 for definition) showing that the signal person meets the Qualification Requirements (see paragraph (c) of this section).	<u>(1) Option (1) – Third party qualified evaluator. The signal person has documentation from a third party qualified evaluator [see Section 4885, Qualified Evaluator (third party)], showing that the signal person meets the qualification requirements [see subsection (c)].</u>	
(2) Option (2)—Employer’s qualified evaluator. The employer’s qualified (see Qualified Evaluator (not a third party), § 1926.1401 for definition) evaluator assesses the individual and determines that the individual meets the Qualification Requirements (see paragraph (c) of this section) and provides documentation of that determination. An assessment by an employer’s qualified evaluator under this option is not portable—other employers are not permitted to use it to meet the requirements of this section.	<u>(2) Option (2) – Employer’s qualified evaluator. The employer’s qualified evaluator [see Section 4885, Qualified Evaluator (not a third party)], assesses the individual and determines that the individual meets the qualification requirements [see subsection (c)] and provides documentation of that determination. An assessment by an employer’s qualified evaluator under this option is not portable – other employers are not permitted to use it to meet the requirements of this section.</u>	
(3) The employer must make the documentation for whichever option is used available at the site while the signal person is employed by the	<u>(3) The employer shall make the documentation for whichever option is used available while the signal person is employed</u>	

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<p>employer. The documentation must specify each type of signaling (e.g. hand signals, radio signals, etc.) for which the signal person meets the requirements of paragraph (c) of this section.</p>	<p><u>by the employer. The documentation shall specify each type of signaling (e.g. hand signals, radio signals, etc.) for which the signal person meets the requirements of subsection (c).</u></p>	
<p>(b) If subsequent actions by the signal person indicate that the individual does not meet the Qualification Requirements (see paragraph (c) of this section), the employer must not allow the individual to continue working as a signal person until re-training is provided and a reassessment is made in accordance with paragraph (a) of this section that confirms that the individual meets the Qualification Requirements.</p>	<p><u>(b) If subsequent actions by the signal person indicate that the individual does not meet the qualification requirements (see subsection (c)), the employer shall not allow the individual to continue working as a signal person until re-training is provided and a reassessment is made in accordance with subsection (a) that confirms that the individual meets the qualification requirements.</u></p>	
<p>(c) Qualification Requirements. Each signal person must: (1) Know and understand the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals. (2) Be competent in the application of the type of signals used. (3) Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads. (4) Know and understand the relevant requirements of § 1926.1419 through § 1926.1422 and § 1926.1428. (5) Demonstrate that he/she meets the requirements in paragraphs (c)(1) through (4) of this section through an oral or written test, and through a practical test.</p>	<p><u>(c) Qualification Requirements. Each signal person shall: (1) Know and understand the type of signals used. (2) Be competent in the application of the type of signals used. (3) Have a basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads. (4) Know and understand the relevant requirements of Sections 5001 through 5001.3. (5) Demonstrate that they meet the requirements in subsections (c)(1) through (4) through an oral or written test, and through a practical test of the signals to be used. EXCEPTION: Marine terminal operations regulated by Article 14 of these Orders.</u></p>	<p>CA has “recommended hand signals” rather than “standard hand signals.”</p>

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<p>§ 1926.1429 Qualifications of maintenance & repair employees.</p>	<p><u>§5033.1. Qualifications of Maintenance and Repair Employees.</u></p>	
<p>(a) Maintenance, inspection and repair personnel are permitted to operate the equipment only where all of the following requirements are met: (1) The operation is limited to those functions necessary to perform maintenance, inspect the equipment, or verify its performance. (2) The personnel either: (i) Operate the equipment under the direct supervision of an operator who meets the requirements of § 1926.1427 (Operator qualification and certification); or (ii) Are familiar with the operation, limitations, characteristics and hazards associated with the type of equipment. (b) Maintenance and repair personnel must meet the definition of a qualified person with respect to the equipment and maintenance/ repair tasks performed.</p>	<p><u>(a) Maintenance, inspection and repair personnel are permitted to operate the equipment only where all of the following requirements are met:</u> <u>(1) The operation is limited to those functions necessary to perform maintenance, inspect the equipment, or verify its performance.</u> <u>(2) The personnel either:</u> <u>(A) Operate the equipment under the direct supervision of an operator who meets the requirements of Section 5006.2 (Operator Training, Certification, and Evaluation for Cranes and Derricks in Construction) as applicable; or</u> <u>(B) Are familiar with the operation, limitations, characteristics and hazards associated with the type of equipment.</u> <u>(b) Maintenance and repair personnel shall meet the definition of a qualified person with respect to the equipment and maintenance/ repair tasks performed.</u></p>	
<p>§ 1926.1430 Training.</p>	<p><u>§5012. Training – Supplemental Requirements for Cranes in Construction.</u></p>	
<p>The employer must provide training as follows: (a) Overhead powerlines. The employer must train each employee specified in § 1926.1408(g) and § 1926.1410(m) in the topics listed in § 1926.1408(g).</p>		<ul style="list-style-type: none"> ▪ 1926.1408(g) [CA Sections 5003.1(g) and 5003.2] already spell-out the training requirements. This requirement is redundant. Additionally, Section 3203 also requires the employer to conduct training. 1926.1410(m) refers back to Section 1408(g).
<p>(b) Signal persons. The employer must train each employee who will be assigned to work as a signal persons who does not meet the</p>		<p>1926.1428(c) [CA Section 5001.3(c)] already spells-out the training requirements. Additionally, Section 3203 also requires the</p>

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requirements of § 1926.1428(c) in the areas addressed in that paragraph.		employer to conduct training.
(c) Operators. (1) Operators-in-Training for equipment where certification or qualification is required by this subpart. The employer must train each operator-in-training in the areas addressed in § 1926.1427(j).	<u>(a) Operators. The employer shall train each operator in accordance with Sections 5006.2(a) and (b), on the safe operation of the equipment the operator will be using.</u>	Section 5006.2 added due to Federal Operator Qualification update dated April 6, 2020.
The employer must provide re-training if the operator-in-training does not pass a qualification or certification test.		Retraining if the operator-in-training fails portions of the training are optional in CA. The federal requirement could lead to “teaching the test” which is not allowed in CA.
(2) Transitional Period. During the four-year phase-in period for operator certification or qualification, as provided in § 1926.1427(k), employers must train each operator who has not yet been certified or qualified in the areas addressed in § 1926.1427(j).		This section is not applicable. CA Section 5006.1 has already phased-in.
(3) Operators excepted from the requirements of § 1926.1427. The employer must train each operator excepted under § 1926.1427(a) from the requirements of § 1926.1427 on the safe operation of the equipment the operator will be using.	§5006. Crane and Hoisting Equipment Operators - Qualifications. (a) Only employees authorized by the employer and trained in the safe operation of cranes or hoisting apparatus shall be permitted to operate such equipment. (b) Trainees may be authorized to operate cranes or hoisting apparatus provided they are under the supervision of a qualified operator. EXCEPTION: Mobile and tower cranes regulated by Section 5006.1.	Section 3203 also covers a wide range of events that require training or retraining.
(4) The employer must train each operator of the equipment covered by this subpart in the following practices:	<u>§5012(b) The employer shall train each operator of the equipment covered by Group 13 in the following practices:</u>	
(i) On friction equipment, whenever moving a boom off a support, first raise the boom a short distance (sufficient to take the load of the	<u>(1) Whenever moving a boom off a support, first raise the boom a short distance (sufficient to take the load of the boom) to determine if</u>	Same requirement; verbiage modified to be regulatory.

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<p>boom) to determine if the boom hoist brake needs to be adjusted. On other types of equipment with a boom, the same practice is applicable, except that typically there is no means of adjusting the brake; if the brake does not hold, a repair is necessary.</p>	<p><u>the boom hoist brake requires adjustment.</u> <u>NOTE: Where more specific manufacturer's instructions are available for this process, they shall apply.</u> <u>(A) If the brake does not hold and cannot be adjusted to hold, the condition shall be repaired.</u></p>	
<p>See § 1926.1417(f) and (j) for additional requirements.</p>	<p><u>(B) See Sections 5008.1(e) [tag-out] and 5008.1(g) [adjustments or repairs] for additional requirements.</u></p>	
<p>(ii) Where available, the manufacturer's emergency procedures for halting unintended equipment movement.</p>	<p><u>(2) Where available, the manufacturer's emergency procedures for halting unintended equipment movement.</u></p>	
<p>(d) Competent persons and qualified persons. The employer must train each competent person and each qualified person regarding the requirements of this subpart applicable to their respective roles.</p>		<p>By definition, competent persons and qualified persons are required to be knowledgeable in these particular hazards.</p>
<p>(e) Crush/pinch points. The employer must train each employee who works with the equipment to keep clear of holes, and crush/ pinch points and the hazards addressed in § 1926.1424 (Work area control).</p>	<p>§4993.1. Work Area Control. *** (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.</p>	
<p>(f) Tag-out. The employer must train each operator and each additional employee authorized to start/energize equipment or operate equipment controls (such as maintenance and repair employees), in the tag-out and start-up procedures in §§ 1926.1417(f) and (g).</p>	<p>§3314. The Control of Hazardous Energy for the Cleaning, Repairing, Servicing, Setting-Up, and Adjusting Operations of Prime Movers, Machinery and Equipment, Including Lockout/Tagout. *** (j) Training. (1) Authorized employees shall be trained on</p>	

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	<p>hazardous energy control procedures and on the hazards related to performing activities required for cleaning, repairing, servicing, setting-up and adjusting prime movers, machinery and equipment.</p> <p>(2) Each affected employee shall be instructed in the purpose and use of the energy control procedure.</p> <p>(3) All other employees whose work operations may be in an area where energy control procedures may be utilized, shall be instructed about the prohibition relating to attempts to restart or reenergize machines or equipment which are locked out or tagged out.</p>	
<p>(g) Training administration.</p> <p>(1) The employer must evaluate each employee required to be trained under this subpart to confirm that the employee understands the information provided in the training.</p> <p>(2) The employer must provide refresher training in relevant topics for each employee when, based on the conduct of the employee or an evaluation of the employee's knowledge, there is an indication that retraining is necessary.</p> <p>(3) Whenever training is required under subpart CC, the employer must provide the training at no cost to the employee.</p>	<p>§3203. Injury and Illness Prevention Program.</p>	<p>California's IIPP covers all these requirements and more. It is too lengthy to include in this SXS but is available for viewing on the web.</p>
<p>§ 1926.1431 Hoisting personnel.</p>	<p>§5004. Crane or Derrick Suspended Personnel Platforms.</p>	
<p>The requirements of this section are supplemental to the other requirements in this subpart and apply when one or more employees are hoisted.</p>	<p>(a) Scope. These Orders apply to the design, construction, testing, use and maintenance of personnel platforms, and the hoisting of personnel platforms on load lines of cranes and derricks.</p>	

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<p>(a) The use of equipment to hoist employees is prohibited except where the employer demonstrates that the erection, use, and dismantling of conventional means of reaching the work area, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform, or scaffold, would be more hazardous, or is not possible because of the project's structural design or worksite conditions. This paragraph does not apply to work covered by subpart R (Steel Erection) of this part.</p>	<p>(c) General Requirements. The use of a crane or derrick to hoist employees on a personnel platform is prohibited, except when the erection, use, and dismantling of conventional means of reaching the worksite, such as a personnel hoist, ladder, stairway, aerial lift, elevating work platform or scaffold, would be more hazardous or is not possible because of structural design or worksite conditions.</p>	
<p>(b) Use of personnel platform. (1) When using equipment to hoist employees, the employees must be in a personnel platform that meets the requirements of paragraph (e) of this section.</p>	<p><u>(k)(10) Use of personnel platform. When using equipment to hoist employees, the employees shall be in a personnel platform that meets the requirements of this section.</u></p>	
<p>(2) Exceptions: A personnel platform is not required for hoisting employees: (i) Into and out of drill shafts that are up to and including 8 feet in diameter (see paragraph (o) of this section for requirements for hoisting these employees). (ii) In pile driving operations (see paragraph (p) of this section for requirements for hoisting these employees). (iii) Solely for transfer to or from a marine worksite in a marine-hoisted personnel transfer device (see paragraph (r) of this section for requirements for hoisting these employees). (iv) In storage-tank (steel or concrete), shaft and chimney operations (see paragraph (s) of this section for requirements for hoisting these employees).</p>	<p><u>EXCEPTIONS: A personnel platform is not required for hoisting employees:</u> <u>1. Into and out of drill shafts that are up to and including 8 feet in diameter [see subsection (o) for requirements for hoisting these employees].</u> <u>2. In pile driving operations [see subsection (p) for requirements for hoisting these employees].</u> <u>3. Solely for transfer to or from a marine worksite in a personnel transfer device [see subsection (r) for requirements for hoisting these employees].</u> <u>4. In storage-tank (steel or concrete), shaft and chimney operations [see subsection (s) for requirements for hoisting these employees].</u></p>	
<p>(c) Equipment set-up. (1) The equipment must be uniformly level,</p>	<p><u>(d)(4) The crane shall be uniformly level in accordance with the manufacturer's</u></p>	

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<p>within one percent of level grade, and located on footing that a qualified person has determined to be sufficiently firm and stable.</p>	<p><u>specifications, not to exceed one percent of level grade, and located on firm footing that a qualified person has determined to be firm and stable.</u></p>	
<p>(2) Equipment with outriggers or stabilizers must have them all extended and locked. The amount of extension must be the same for all outriggers and stabilizers and in accordance with manufacturer procedures and load charts.</p>	<p><u>[(d)(4)cont'd]</u> Cranes equipped with outriggers or stabilizers shall have them all fully deployed following manufacturer's specifications, insofar as applicable, when hoisting employees.</p>	<p>Lock is not a term commonly used in the trade in CA. Outriggers are held in place by holding valves, switches, etc.</p>
<p>(d) Equipment criteria. (1) Capacity: Use of suspended personnel platforms. The total load (with the platform loaded, including the hook, load line and rigging) must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.</p>	<p>(d)(5) <u>Capacity:</u> <u>(A) Use of suspended personnel platforms.</u> The total weight of the loaded personnel platform and related rigging shall not exceed 50 percent of the rated capacity for the radius and configuration of the crane or derrick, <u>except during proof testing.</u></p>	<p>Rigging includes load line and hook.</p>
<p>(2) Capacity: Use of boom-attached personnel platforms. The total weight of the loaded personnel platform must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment (except during proof testing).</p>	<p><u>(B) Use of boom-attached personnel platforms, when approved by the crane manufacturer or certified agent. The total weight of the loaded personnel platform shall not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.</u></p>	
<p>(3) Capacity: Hoisting personnel without a personnel platform. When hoisting personnel without a personnel platform pursuant to paragraph (b)(2) of this section, the total load (including the hook, load line, rigging and any other equipment that imposes a load) must not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.</p>	<p><u>(C) Hoisting personnel without a personnel platform. When hoisting personnel without a personnel platform pursuant to exceptions to subsection (k)(10), the total load shall not exceed 50 percent of the rated capacity for the radius and configuration of the equipment, except during proof testing.</u></p>	<p>The federal parenthetical does not apply to overhead and gantry cranes.</p>
<p>(4) When the occupied personnel platform is in a stationary working position, the load and</p>	<p>(d)(3) Load and boom hoist drum brakes, swing brakes, and operator actuated secondary</p>	

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boom hoist brakes, swing brakes, and operator actuated secondary braking and locking features (such as pawls or dogs) or automatic secondary brakes must be engaged.	<u>braking and locking devices such as pawls or dogs or automatic secondary brakes shall be engaged when the occupied personnel platform is in a stationary working position.</u>	
(5) Devices. (i) Equipment (except for derricks and articulating cranes) with a variable angle boom must be equipped with all of the following: (A) A boom angle indicator, readily visible to the operator, and (B) A boom hoist limiting device.	(e) Instruments and Components. (1) Cranes, <u>except articulating boom cranes, and derricks with variable angle booms shall be equipped with the following:</u> (A) <u>A boom angle indicator, readily visible to the operator.</u> (B) <u>A boom hoist limiting device.</u>	
(ii) Articulating cranes must be equipped with a properly functioning automatic overload protection device.	(e)(5) <u>Articulating boom cranes shall be equipped with a properly functioning automatic overload protection device.</u>	
(iii) Equipment with a luffing jib must be equipped with: (A) A jib angle indicator, readily visible to the operator, and. (B) A jib hoist limiting device.	(e)(6) <u>Equipment with a luffing jib shall be equipped with:</u> (A) <u>A jib angle or radius indicator, readily visible to the operator, and</u> (B) <u>A jib hoist limiting device.</u>	
(iv) Equipment with telescoping booms must be equipped with a device to indicate the boom's extended length clearly to the operator, or must have measuring marks on the boom.	(e)(2) Cranes with telescoping booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length, or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting personnel.	
(v) Anti two-block. A device which automatically prevents damage and load failure from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component) must be used. The device(s) must prevent such damage/failure at all points where two-blocking could occur.	(e)(3)(A) An anti-two-block device shall be used which when activated, disengages all crane functions that can cause two-blocking. (B) When a derrick is used to hoist personnel platforms, limiting devices shall be installed to prevent two-blocking.	
Exception: This device is not required when hoisting personnel in pile driving operations.	<u>EXCEPTION: This device is not required when hoisting personnel in pile driving operations.</u>	

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<p>Instead, paragraph (p)(2) of this section specifies how to prevent two-blocking during such operations.</p>	<p><u>Instead, subsection (p)(2) of this section specifies how to prevent two-blocking during such operations.</u></p>	
<p>(vi) Controlled load lowering. The load line hoist drum must have a system, other than the load line hoist brake, which regulates the lowering rate of speed of the hoist mechanism. This system or device must be used when hoisting personnel. Note: Free fall of the load line hoist is prohibited (see § 1926.1426(d); the use of equipment in which the boom hoist mechanism can free fall is also prohibited (see § 1926.1426(a)(1).</p>	<p>(e)(4) The load line hoist drum shall have a system or device on the power train, other than the hoist brake, which regulates the lowering rate of speed of the hoist mechanism (controlled load lowering). <u>NOTE: Free fall of the load line hoist in use is prohibited; the use of equipment in which the boom hoist mechanism can free fall is also prohibited.</u></p>	
<p>(vii) Proper operation required. Personnel hoisting operations must not begin unless the devices listed in this section are in proper working order. If a device stops working properly during such operations, the operator must safely stop operations. Personnel hoisting operations must not resume until the device is again working properly. Alternative measures are not permitted. (See § 1926.1417 for tag-out and related requirements.)</p>	<p><u>(d)(8) Proper operation required. Personnel hoisting operations shall not begin unless the devices listed in this section are in proper working order. If a device stops working properly during such operations, the operator shall safely stop operations. Personnel hoisting operations shall not resume until the device is again working properly. Alternative measures are not permitted. (See Section 3314 for tag-out and related requirements.)</u></p>	
<p>(6) Direct attachment of a personnel platform to a luffing jib is prohibited.</p>	<p><u>(k)(9) Direct attachment of a personnel platform to a luffing jib is prohibited.</u></p>	
<p>(e) Personnel platform criteria. (1) A qualified person familiar with structural design must design the personnel platform and attachment/suspension system used for hoisting personnel.</p>	<p>(f) Personnel Platforms -Design Criteria. (1) The personnel platform and suspension system shall be designed by a register engineer.</p>	
<p>(2) The system used to connect the personnel platform to the equipment must allow the platform to remain within 10 degrees of level, regardless of boom angle.</p>	<p><u>(f)(4) The system used to connect the personnel platform to the equipment shall limit the platform to within 10 degrees of level, regardless of boom/jib angle.</u></p>	

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(3) The suspension system must be designed to minimize tipping of the platform due to movement of employees occupying the platform.	(f)(2) The suspension system shall be designed to minimize tipping of the platform due to movement of employees occupying the platform.	
(4) The personnel platform itself (excluding the guardrail system and personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.	(f)(3) The personnel platform itself, except the guardrail system and body belt/harness anchorages, shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load...	
(5) All welding of the personnel platform and its components must be performed by a certified welder familiar with the weld grades, types and material specified in the platform design.	(g)(8) All welding of the personnel platform and its components shall be performed by a certified welder familiar with the weld grades, types and material specified in the platform design.	
(6) The personnel platform must be equipped with a guardrail system which meets the requirements of subpart M of this part, and	(f)(3) ...Criteria for guardrail systems and body belt/harness anchorages are contained in article 2 of the General Industry Safety Orders and article 24 of the Construction Safety Orders respectively.	
must be enclosed at least from the toe board to mid-rail with either solid construction material or expanded metal having openings no greater than 1/2 inch (1.27 cm).	(g)(1) Each personnel platform shall be equipped with a guardrail system which meet the requirements of article 2 of the General Industry Safety Orders and shall be enclosed at least from the toeboard to mid-rail with either solid construction or expanded metal having openings no greater than 1/2 inch.	
Points to which personal fall arrest systems are attached must meet the anchorage requirements in subpart M of this part.	(f)(3) ...Criteria for guardrail systems and body belt/harness anchorages are contained in article 2 of the General Industry Safety Orders and article 24 of the Construction Safety Orders respectively.	
(7) A grab rail must be installed inside the entire perimeter of the personnel platform except for access gates/doors.	(g)(2) A grab rail shall be installed inside the entire perimeter of the personnel platform.	
(8) Access gates/doors. If installed, access	(g)(3) Access gates, if installed, shall not swing	

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<p>gates/doors of all types (including swinging, sliding, folding, or other types) must: (i) Not swing outward. If due to the size of the personnel platform, such as a 1-person platform, it is infeasible for the door to swing inward and allow safe entry for the platform occupant, then the access gate/door may swing outward.</p>	<p>outward during hoisting.</p>	
<p>(ii) Be equipped with a device that prevents accidental opening.</p>	<p>(g)(4) Access gates, including sliding or folding gates, shall be equipped with a restraining device to prevent accidental opening.</p>	
<p>(9) Headroom must be sufficient to allow employees to stand upright in the platform.</p>	<p>(g)(5) Headroom shall be provided which allows employees to stand upright in the platform.</p>	
<p>(10) In addition to the use of hard hats, employees must be protected by overhead protection on the personnel platform when employees are exposed to falling objects. The platform overhead protection must not obscure the view of the operator or platform occupants (such as wire mesh that has up to 1/2 inch openings), unless full protection is necessary.</p>	<p>(g)(6) In addition to the use of hard hats, employees shall be protected by overhead protection on the personnel platform when employees are exposed to falling objects.</p>	<p>An AC determined that the second sentence of the federal verbiage was vague and unenforceable.</p>
<p>(11) All edges exposed to employee contact must be smooth enough to prevent injury.</p>	<p>(g)(7) All rough edges exposed to contact by employees shall be surfaced or smoothed in order to prevent injury to employees from punctures or lacerations.</p>	
<p>(12) The weight of the platform and its rated capacity must be conspicuously posted on the platform with a plate or other permanent marking</p>	<p>(g)(9) The personnel platform shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform and its rated load capacity.</p>	
<p>(f) Personnel platform loading. (1) The personnel platform must not be loaded</p>	<p>(h) Personnel Platform Loading. (1) The personnel platform shall not be loaded</p>	

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<p>in excess of its rated capacity.</p>	<p>in excess of its rated load capacity.</p>	
<p>(2) Use. (i) Personnel platforms must be used only for employees, their tools, and the materials necessary to do their work. Platforms must not be used to hoist materials or tools when not hoisting personnel.</p>	<p>(h)(3) Personnel platforms shall be used only for employees, their tools, and the materials necessary to do their work, and shall not be used to hoist only materials or tools when not hoisting personnel.</p>	
<p>(ii) Exception: Materials and tools to be used during the lift, if secured and distributed in accordance with paragraph (f)(3) of this section may be in the platform for trial lifts.</p>	<p>(j) Trial Lift, Inspection, and Proof Testing. (1)...Materials and tools to be used during the actual lift can be loaded in the platform, as provided in section 5004(h)(4) and (5) for the trial lift...</p>	<p>▪</p>
<p>(3) Materials and tools must be: (i) Secured to prevent displacement. (ii) Evenly distributed within the confines of the platform while it is suspended</p>	<p>(h)(4) Materials and tools for use during a personnel lift shall be secured to prevent displacement. (5) Materials and tools for use during a personnel lift shall be evenly distributed within the confines of the platform while the platform is suspended.</p>	
<p>(4) The number of employees occupying the personnel platform must not exceed the maximum number the platform was designed to hold or the number required to perform the work, whichever is less.</p>	<p>(h) Personnel Platform Loading. (1) The personnel platform shall not be loaded in excess of its rated load capacity. (2) The number of employees occupying the personnel platform shall not exceed the number required for the work being performed.</p>	
<p>(g) Attachment and rigging. (1) Hooks and other detachable devices. (i) Hooks used in the connection between the hoist line and the personnel platform (including hooks on overhaul ball assemblies, lower load blocks, bridle legs, or other attachment assemblies or components) must be: (A) Of a type that can be closed and locked,</p>	<p>(i) Rigging. *** (2) <u>Hooks and other detachable devices.</u> (A) <u>Hooks used in the connection between the hoist line and the personnel platform (including hooks on overhaul ball assemblies, lower load blocks, or other attachments assemblies or components)</u> shall be of:</p>	<p>Alloy anchor-type shackle relocated to (i)(2)(B).</p>

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<p>eliminating the throat opening. (B) Closed and locked when attached.</p>	<p><u>1. Of a type that can be closed and locked, eliminating the hook throat opening. Alternatively, an alloy anchor type shackle with a bolt, nut and retaining pin may be used.</u> <u>2. Closed and locked when attached.</u></p>	
<p>(ii) Shackles used in place of hooks must be of the alloy anchor type, with either: (A) A bolt, nut and retaining pin, in place; or (B) Of the screw type, with the screw pin secured from accidental removal.</p>	<p><u>(B) Shackles used in place of hooks shall be of the alloy anchor type, with either:</u> <u>1. A bolt, nut and retaining pin, in place; or</u> <u>2. Of the screw type, with the screw pin secured from accidental removal.</u></p>	
<p>(iii) Where other detachable devices are used, they must be of the type that can be closed and locked to the same extent as the devices addressed in paragraphs (g)(1)(i) and (ii) of this section. Such devices must be closed and locked when attached.</p>	<p><u>(C) Where other detachable devices are used, they shall be of the type that can be closed and locked to the same extent as the devices addressed in subsections (i)(2)(A) and (B). Such devices shall be closed and locked when attached.</u></p>	
<p>(2) Rope bridle. When a rope bridle is used to suspend the personnel platform, each bridle leg must be connected to a master link or shackle (see paragraph (g)(1) of this section) in a manner that ensures that the load is evenly divided among the bridle legs.</p>	<p><u>(i)(1) When a wire rope bridle is used to connect the personnel platform to the load line, each bridle leg shall be connected to a master link or shackle in such a manner to ensure that the load is evenly divided among the bridle legs.</u></p>	
<p>(3) Rigging hardware (including wire rope, shackles, rings, master links, and other rigging hardware) and hooks must be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant rope is used, the slings must be capable of supporting without failure at least ten times the maximum intended load.</p>	<p><u>(i)(3) Rigging hardware (including wire rope slings, shackles, rings, master links, and other rigging hardware) shall must be capable of supporting, without failure, at least five times the maximum intended load applied or transmitted to that component. Where rotation resistant rope is used, the slings shall be capable of supporting without failure at least ten times the maximum intended load.</u> <u>(A) Rotation resistant wire rope slings and slings made of synthetic or natural fibers shall not be used.</u></p>	<p>B30.9 prohibits the use of rotation-resistant wire rope for slings. B30.23 prohibits the use of synthetic and natural fiber slings for platforms.</p>

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<p>(4) Eyes in wire rope slings must be fabricated with thimbles.</p>	<p>(i)(4) All eyes in wire rope slings shall be fabricated with thimbles.</p>	
<p>(5) Bridles and associated rigging for suspending the personnel platform must be used only for the platform and the necessary employees, their tools and materials necessary to do their work. The bridles and associated rigging must not have been used for any purpose other than hoisting personnel.</p>	<p>(i)(5) Bridles and associated rigging for attaching the personnel platform to the hoist line shall be used only for the platform and the necessary employees, their tools and materials necessary to do their work, and shall not be used for any other purpose when not hoisting personnel.</p>	
<p>(h) Trial lift and inspection. (1) A trial lift with the unoccupied personnel platform loaded at least to the anticipated lift weight must be made from ground level, or any other location where employees will enter the platform, to each location at which the platform is to be hoisted and positioned.</p>	<p>(j) Trial Lift, Inspection, and Proof Testing. (1) A trial lift with the unoccupied personnel platform loaded at least to the anticipated lift weight shall be made from ground level, or any other location where employees will enter the platform, to each location at which the personnel platform is to be hoisted and positioned.</p>	
<p>Where there is more than one location to be reached from a single set-up position, either individual trial lifts for each location, or a single trial lift, in which the platform is moved sequentially to each location, must be performed; the method selected must be the same as the method that will be used to hoist the personnel.</p>	<p>(j)(1) ...<u>Where there is more than one location to be reached from a single set-up position, either individual trial lifts for each location, or a single trial lift, in which the platform is moved sequentially to each location, shall be performed; the method selected shall be the same as the method that will be used to hoist the personnel.</u></p>	
<p>(2) The trial lift must be performed immediately prior to each shift in which personnel will be hoisted. In addition, the trial lift must be repeated prior to hoisting employees in each of the following circumstances: (i) The equipment is moved and set up in a new location or returned to a previously used location. (ii) The lift route is changed, unless the</p>	<p>(j)(1) ... This trial lift shall be performed immediately prior to placing personnel on the platform... (2) The trial lift shall be repeated prior to hoisting employees whenever the crane or derrick is moved and set up in a new location or returned to a previously used location. Additionally, the trial lift shall be replaced <u>repeated</u> when the lift route is changed unless</p>	<p>CA has “recommended hand signals” rather than “standard hand signals.”</p>

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<p>competent person determines that the new route presents no new factors affecting safety.</p>	<p>the operator determines that the route change is not significant, i.e. the route change would not affect the safety of hoisted employees.</p>	
<p>(3) The competent person must determine that: (i) Safety devices and operational aids required by this section are activated and functioning properly. Other safety devices and operational aids must meet the requirements of § 1926.1415 and § 1926.1416. (ii) Nothing interferes with the equipment or the personnel platform in the course of the trial lift. (iii) The lift will not exceed 50 percent of the equipment’s rated capacity at any time during the lift. (iv) The load radius to be used during the lift has been accurately determined.</p>	<p>(j)(1) ... The operator shall determine that all systems, controls and safety devices are activated and functioning properly; that no interferences exist; and that all configurations necessary to reach those work locations will allow the operator to remain under the 50 percent limit <u>as established in Section 5004(d)(5)(A) of the hoist's rated capacity, and that the load radius to be used during the lift has been accurately determined.</u> Materials and tools to be used during the actual lift can be loaded in the platform, as provided in sSection 5004(h)(4) and (5) for the trial lift.</p>	
<p>(4) Immediately after the trial lift, the competent person must: (i) Conduct a visual inspection of the equipment, base support or ground, and personnel platform, to determine whether the trial lift has exposed any defect or problem or produced any adverse effect.</p>	<p>(j)(4) A visual inspection of the crane or derrick, rigging, personnel platform, and the crane or derrick base support or ground shall be conducted by a qualified person immediately after the trial lift to determine whether the testing has exposed any defect or produced any adverse effect upon any component or structure.</p>	
<p>(ii) Confirm that, upon the completion of the trial lift process, the test weight has been removed.</p>	<p>(j)(4) ... <u>The qualified person shall also confirm that the test weight has been removed prior to lifting personnel.</u></p>	
<p>(5) Immediately prior to each lift: (i) The platform must be hoisted a few inches with the personnel and materials/tools on board and inspected by a competent person to ensure that it is secure and properly balanced.</p>	<p>(3) After the trial lift, and just prior to hoisting personnel, the platform shall be hoisted a few inches <u>with the personnel and materials/tools on board and inspected by a qualified person to insure that it is secure and properly balanced.</u></p>	

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<p>(ii) The following conditions must be determined by a competent person to exist before the lift of personnel proceeds:</p>	<p>Employees shall not be hoisted unless the following conditions are determined to exist:</p>	
<p>(A) Hoist ropes must be free of deficiencies in accordance with § 1926.1413(a). (B) Multiple part lines must not be twisted around each other. (C) The primary attachment must be centered over the platform. (D) If the load rope is slack, the hoisting system must be inspected to ensure that all ropes are properly seated on drums and in sheaves.</p>	<p>(A) Hoist ropes shall be free of kinks <u>and other deficiencies in accordance with Section 5031(a)-(b) and Section 5036(a) through (c)</u>; (B) Multiple part lines shall not be twisted around each other; (C) The primary attachment shall be centered over the platform; and (D) The hoisting system shall be inspected if the load rope is slack to ensure all ropes are properly positioned on drums and sheaves.</p>	
<p>(6) Any condition found during the trial lift and subsequent inspection(s) that fails to meet a requirement of this standard or otherwise creates a safety hazard must be corrected before hoisting personnel. (See § 1926.1417 for tag-out and related requirements.) (i) [Reserved.]</p>	<p>(5) Any defects found during inspections which <u>fails to meet a requirement of this standard or otherwise</u> creates a safety hazard shall be corrected before hoisting personnel.</p>	
<p>(j) Proof testing. (1) At each jobsite, prior to hoisting employees on the personnel platform, and after any repair or modification, the platform and rigging must be proof tested to 125 percent of the platform's rated capacity. The proof test may be done concurrently with the trial lift. (2) The platform must be lowered by controlled load lowering, braked, and held in a suspended position for a minimum of five minutes with the test load evenly distributed on the platform. (3) After proof testing, a competent person must inspect the platform and rigging to determine if the test has been passed. If any deficiencies are</p>	<p>(6) At each job site, prior to hoisting employees on the personnel platform, and after any repair or modification, the platform and rigging shall be proof tested to 125 percent of the platform's rated capacity by holding it in a suspended position for five minutes with the test load evenly distributed on the platform (this may be done concurrently with the trial lift). After proof testing, a qualified person shall inspect the platform and rigging. Any</p>	

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<p>found that pose a safety hazard, the platform and rigging must not be used to hoist personnel unless the deficiencies are corrected, the test is repeated, and a competent person determines that the test has been passed. (See § 1926.1417 for tag-out and related requirements.) (4) Personnel hoisting must not be conducted until the competent person determines that the platform and rigging have successfully passed the proof test.</p>	<p>deficiencies found shall be corrected and another proof test shall be conducted.</p> <p>Personnel hoisting shall not be conducted until the proof testing requirements are satisfied.</p>	
<p>(k) Work practices. (1) Hoisting of the personnel platform must be performed in a slow, controlled, cautious manner, with no sudden movements of the equipment or the platform.</p>	<p>(d) Operational Criteria. (1) Hoisting of the personnel platform shall be performed in a slow, controlled, cautious manner with no sudden movements of the crane or derrick, or the platform.</p>	
<p>(2) Platform occupants must: (i) Keep all parts of the body inside the platform during raising, lowering, and horizontal movement. This provision does not apply to an occupant of the platform when necessary to position the platform or while performing the duties of a signal person.</p>	<p>(k) Work Practices. (1) Employees shall: (A) <u>Keep all parts of the body inside the platform during raising, lowering, and horizontal movement positioning.</u> This provision does not apply to an occupant of the platform <u>when necessary to position the platform or while performing the duties of a signal person.</u></p>	
<p>(ii) Not stand, sit on, or work from the top or intermediate rail or toeboard, or use any other means/device to raise their working height. (iii) Not pull the platform out of plumb in relation to the hoisting equipment.</p>	<p>(B) <u>Not stand, sit on, or work from the top or intermediate rail or toeboard, or use any other means/device to raise their working height above the platform floor.</u> (C) <u>Not pull the platform out of plumb in relation to the hoisting equipment.</u></p>	
<p>(3) Before employees exit or enter a hoisted personnel platform that is not landed, the platform must be secured to the structure where</p>	<p>(2) Before employees exit or enter a hoisted personnel platform that is not landed, the platform shall be secured to the structure where</p>	

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<p>the work is to be performed, unless the employer can demonstrate that securing to the structure would create a greater hazard.</p>	<p>the work is to be performed, unless securing to the structure creates an unsafe situation.</p>	
<p>(4) If the platform is tied to the structure, the operator must not move the platform until the operator receives confirmation that it is freely suspended.</p>	<p><u>(A) If the platform is tied to the structure, the operator shall not move the platform until the operator receives confirmation that it is freely suspended.</u></p>	
<p>(5) Tag lines must be used when necessary to control the platform.</p>	<p>(3) Tag lines shall be used unless their use creates an unsafe condition.</p>	
<p>(6) Platforms without controls. Where the platform is not equipped with controls, the equipment operator must remain at the equipment controls, on site, and in view of the equipment, at all times while the platform is occupied.</p>	<p>(4) <u>Attendance.</u> The crane or derrick operator shall remain at the controls, <u>on site, and in view of the platform or in communication with the platform personnel or signal person</u> at all times when <u>while the crane engine is running</u> and the platform is occupied <u>and elevated.</u></p>	
<p>(7) Platforms with controls. Where the platform is equipped with controls, all of the following must be met at all times while the platform is occupied: (i) The occupant using the controls in the platform must be a qualified person with respect to their use, including the safe limitations of the equipment and hazards associated with its operation. (ii) The equipment operator must be at a set of equipment controls that include boom and swing functions of the equipment, and must be on site and in view of the equipment.</p>		<p>Suspended platforms with controls are not permitted in CA. Boom-mounted platforms with controls are covered in GISO Article 24 (Elevating Platforms and Aerial Devices).</p>
<p>(8) Environmental conditions.</p>	<p>(5) <u>Environmental conditions.</u> Hoisting of</p>	<p>Adopt federal verbiage with AC recommended</p>

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<p>(i) Wind. When wind speed (sustained or gusts) exceeds 20 mph at the personnel platform, a qualified person must determine if, in light of the wind conditions, it is not safe to lift personnel. If it is not, the lifting operation must not begin (or, if already in progress, must be terminated).</p> <p>(ii) Other weather and environmental conditions. A qualified person must determine if, in light of indications of dangerous weather conditions, or other impending or existing danger, it is not safe to lift personnel. If it is not, the lifting operation must not begin (or, if already in progress, must be terminated).</p>	<p>employees shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.</p> <p><u>(A) Wind. When wind speed (sustained or gusts) exceeds 20 mph at the personnel platform, a competent person shall determine if, in light of the wind conditions, it is safe to lift personnel. If it is not safe, the lifting operation shall not begin (or, if already in progress, shall be terminated).</u></p> <p><u>(B) Other weather and environmental conditions. A competent person shall determine if, in light of indications of dangerous weather conditions, or other impending or existing danger, it is safe to lift personnel. If it is not safe, the lifting operation shall not begin (or, if already in progress, shall be terminated).</u></p>	<p>clarifications. Changed “qualified” to “competent.”</p>
<p>(9) Employees being hoisted must remain in direct communication with the signal person (where used), or the operator.</p>	<p>(6) Employees being hoisted and the signal person(s) shall remain in continuous radio communication with the operator.</p>	
<p>(10) Fall protection.</p> <p>(i) Except over water, employees occupying the personnel platform must be provided and use a personal fall arrest system. The system must be attached to a structural member within the personnel platform. When working over or near water, the requirements of § 1926.106 apply.</p> <p>(ii) The fall arrest system, including the attachment point (anchorage) used to comply with paragraph (i) of this section, must meet the requirements in § 1926.502.</p>	<p><u>(7) Fall protection.</u></p> <p><u>(A) Except over water, employees occupying the personnel platform shall be provided and use a personal fall arrest body belt/harness system with lanyard appropriately attached to the lower load block or overhaul ball, or to a structural member within the personnel platform capable of supporting a fall impact for employees using the anchorage. When working over water, the requirements of sSection 1602 of the Construction Safety Orders shall apply.</u></p> <p><u>(B) The fall arrest system, including the</u></p>	

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	<u>attachment point (anchorage) used to comply with subsection (k)(7)(A), shall comply with Article 24 of the Construction Safety Orders.</u>	
(11) Other load lines. (i) No lifts must be made on any other of the equipment's load lines while personnel are being hoisted, except in pile driving operations.	(8) No lifts shall be made on another of the crane's or derrick's load-lines while personnel are suspended on a platform.	
(ii) Factory-produced boom-mounted personnel platforms that incorporate a winch as original equipment. Loads are permitted to be hoisted by such a winch while employees occupy the personnel platform only where the load on the winch line does not exceed 500 pounds and does not exceed the rated capacity of the winch and platform.		Factory-produced boom-mounted personnel platforms are covered by ASME A92 standards and Title 8 Article 24 (outside the scope of Group 13).
(12) Traveling—equipment other than derricks. (i) Hoisting of employees while the equipment is traveling is prohibited, except for: (A) Equipment that travels on fixed rails; or (B) Where the employer demonstrates that there is no less hazardous way to perform the work. (C) This exception does not apply to rubber-tired equipment.	(l) Traveling. (1) Hoisting of employees while the crane is traveling is prohibited, except for portal, tower and cranes on fixed tracks or railways.	Federal (12)(i)(B) is a reduction in safety specified by state section (l)(1) and thus is not adopted.
(ii) Where employees are hoisted while the equipment is traveling, all of the following criteria must be met:	(2) Under any circumstances where a crane would travel while hoisting personnel, the employer shall implement the following procedures to safeguard employees:	
(A) Equipment travel must be restricted to a fixed track or runway. (B) Where a runway is used, it must be a firm,	(D) Crane travel shall be restricted to a <u>fixed track or railway.</u> 1. Where a runway is used, it must be a firm,	

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<p>level surface designed, prepared and designated as a path of travel for the weight and configuration of the equipment being used to lift and travel with the personnel platform. An existing surface may be used as long as it meets these criteria.</p>	<p>level surface designed, prepared and designated as a path of travel for the weight and configuration of the equipment being used to lift and travel with the personnel platform. An existing surface may be used as long as it meets these criteria.</p>	
<p>(C) Equipment travel must be limited to boom length. (D) The boom must be parallel to the direction of travel, except where it is safer to do otherwise. (E) A complete trial run must be performed to test the route of travel before employees are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by paragraph (h) of this section which tests the lift route.</p>	<p>(l)(2)(A) Travel shall be limited to the load radius of the boom used during the lift; and (B) The boom must <u>shall</u> be parallel to the direction of travel; (C) A complete trial run shall be performed to test the route of travel before employees are allowed to occupy the platform. This trial run can be performed at the same time as the trial lift required by sSection 5004(j)(1) of these Orders which tests the route of the lift.</p>	
<p>(13) Traveling—derricks. Derricks are prohibited from traveling while personnel are hoisted. (1) [Reserved.]</p>	<p>(l)(1) Hoisting of employees while the crane is traveling is prohibited, except for portal, tower and cranes on fixed tracks or railways.</p>	
<p>(m) Pre-lift meeting. A pre-lift meeting must be: (1) Held to review the applicable requirements of this section and the procedures that will be followed. (2) Attended by the equipment operator, signal person (if used for the lift), employees to be hoisted, and the person responsible for the task to be performed. (3) Held prior to the trial lift at each new work location, and must be repeated for any employees newly assigned to the operation.</p>	<p>(m) Pre-lift Meeting. (1) A meeting attended by the crane or derrick operator, signal person(s) (if necessary for the lift), employee(s) to be lifted, and the person responsible for the task to be performed shall be held to review the appropriate requirements of section 5004 of these Orders and the procedures to be followed. (2) This meeting shall be held prior to the trial lift at each new work location and shall be repeated for any employees newly assigned to</p>	

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<p>(a) The employer of the signal person must ensure that each signal person meets the Qualification Requirements (paragraph (c) of this section) prior to giving any signals. This requirement must be met by using either Option (1) or Option (2) of this section.</p>	<p>the operation. <u>§5001.3(a) The employer of the signal person shall ensure that each signal person meets the qualification requirements [subsection (c)] prior to giving any signals. This requirement shall be met by using either Option (1) or Option (2) of this section.</u></p>	
<p>(n) Hoisting personnel near power lines. Hoisting personnel within 20 feet of a power line that is up to 350 kV, and hoisting personnel within 50 feet of a power line that is over 350 kV, is prohibited, except for work covered by subpart V of this part (Power Transmission and Distribution).</p>	<p><u>(n) Hoisting personnel near power lines. Hoisting personnel within 20 feet of a power line that is up to 350kV, and hoisting personnel within 50 feet of a power line that is over 350kV, is prohibited, except for work covered by the High Voltage Electrical Safety Orders.</u></p>	<p>Copied from Section 1616.6(n).</p>
<p>(o) Hoisting personnel in drill shafts. When hoisting employees into and out of drill shafts that are up to and including 8 feet in diameter, all of the following requirements must be met: (1) The employee must be in either a personnel platform or on a boatswain’s chair. (2) If using a personnel platform, paragraphs (a) through (n) of this section apply. (3) If using a boatswain’s chair: (i) The following paragraphs of this section apply: (a), (c), (d)(1), (d)(3), (d)(4), (e)(1), (e)(2), (e)(3), (f)(1), (f)(2)(i), (f)(3)(i), (g), (h), (k)(1), (k)(6), (k)(8), (k)(9), (k)(11)(i), (m), (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “boatswain’s chair.” (ii) A signal person must be stationed at the shaft opening. (iii) The employee must be hoisted in a slow, controlled descent and ascent.</p>	<p><u>(o) Hoisting personnel in drill shafts. When hoisting employees into and out of drill shafts that are up to and including 8 feet in diameter, all of the following requirements shall be met: (1) The employee shall be in either a personnel platform or on a boatswain’s chair. (2) If using a personnel platform, subsections (a) through (n) of this section apply. (3) If using a boatswain’s chair: (A) The following subsections apply: (c), (d)(1), (d)(3)-(d)(4), (d)(5)(A), (d)(5)(C), (f)(1), (f)(2), (f)(4), (h)(1), (h)(3), (h)(4), (i), (j), (k)(4), (k)(5), (k)(6), (k)(8), (m), and (n). Where the terms “personnel platform” or “platform” are used in these subsections, replace them with “boatswain’s chair.” (B) A signal person shall be stationed at the shaft opening. (C) The employee shall be hoisted in a slow, controlled descent and ascent.</u></p>	

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<p>(iv) The employee must use personal fall protection equipment, including a full body harness, attached independent of the crane/ derrick.</p> <p>(v) The fall protection equipment must meet the applicable requirements in § 1926.502.</p> <p>(vi) The boatswain’s chair itself (excluding the personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.</p> <p>(vii) No more than one person must be hoisted at a time.</p>	<p><u>(D) The employee shall use personal fall protection equipment, including a full body harness, attached independent of the crane/ derrick.</u></p> <p><u>(E) The fall protection equipment shall meet the applicable requirements of Article 2 of the General Industry Safety Orders and Article 24 of the Construction Safety Orders.</u></p> <p><u>(F) The boatswain’s chair itself (excluding the personal fall arrest system anchorages), shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load.</u></p> <p><u>(G) No more than one person shall be hoisted at a time.</u></p>	
<p>(p) Hoisting personnel for pile driving operations. When hoisting an employee in pile driving operations, the following requirements must be met:</p> <p>(1) The employee must be in a personnel platform or boatswain’s chair.</p>	<p><u>(p) Hoisting personnel for pile driving operations. When hoisting an employee in pile driving operations, the following requirements shall be met:</u></p> <p><u>(1) The employee shall be in a personnel platform or boatswain’s chair.</u></p>	
<p>(2) For lattice boom cranes: Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter who is in direct communication with the operator to inform the operator when this point is reached.</p> <p>For telescopic boom cranes: Clearly mark the cable (so that it can be easily seen by the operator) at a point that will give the operator</p>	<p><u>(2) For lattice boom and telescopic boom mobile cranes: Clearly mark the cable (so that it can easily be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, and use a spotter who is in direct communication with the operator to inform the operator when this point is reached.</u></p>	

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<p>sufficient time to stop the hoist to prevent twoblocking, and use a spotter who is in direct communication with the operator to inform the operator when this point is reached.</p>		
<p>(3) If using a personnel platform, paragraphs (b) through (n) of this section apply.</p>		<p>All of Section 5004 applies as applicable.</p>
<p>(4) If using a boatswain’s chair: (i) The following paragraphs of this section apply: (a), (c), (d)(1), (d)(3), (d)(4), (e)(1), (e)(2), (e)(3), (f)(1), (f)(2)(i), (f)(3)(i), (g), (h), (j), (k)(1), (k)(6), (k)(8), (k)(9), (k)(11)(i), (m), and (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “boatswains chair.” (ii) The employee must be hoisted in a slow, controlled descent and ascent.</p>	<p><u>(3) If using a boatswain’s chair, subsections (o)(3)(A), (C), (D), (E), (F) and (G) shall apply. Where the terms “personnel platform” or “platform” are used in these subsections, substitute “boatswains chair.”</u></p>	<p>Repetitive requirements condensed. 1926.1431(p)(4) [T8 Section 5004(p)(4)] is the same as (o)(3) except as noted.</p>
<p>(iii) The employee must use personal fall protection equipment, including a full body harness, independently attached to the lower load block or overhaul ball. (iv) The fall protection equipment must meet the applicable requirements in § 1926.502. (v) The boatswain’s chair itself (excluding the personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load. (vi) No more than one person must be hoisted at a time. (q) [Reserved.]</p>	<p><u>EXCEPTION: In lieu of personal fall protection attached independent of the crane/derrick per subsection (o)(3)(D), personal fall protection may be independently attached to the lower load block or overhaul ball.</u></p> <p>(q) [Reserved.]</p>	

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<p>(r) Hoisting personnel for marine transfer. When hoisting employees solely for transfer to or from a marine worksite, the following requirements must be met:</p> <p>(1) The employee must be in either a personnel platform or a marine-hoisted personnel transfer device.</p> <p>(2) If using a personnel platform, paragraphs (a) through (n) of this section apply.</p> <p>(3) If using a marine-hoisted personnel transfer device:</p> <p>(i) The following paragraphs of this section apply: (a), (c)(2), (d)(1), (d)(3), (d)(4), (e)(1) through (5), (e)(12), (f)(1), (g), (h), (j), (k)(1), (k)(8), (k)(9), (k)(10)(ii), (k)(11)(i), (k)(12), (m), and (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “marine-hoisted personnel transfer device.”</p> <p>(ii) The transfer device must be used only for transferring workers.</p> <p>(iii) The number of workers occupying the transfer device must not exceed the maximum number it was designed to hold.</p> <p>(iv) Each employee must wear a U.S. Coast Guard personal flotation device approved for industrial use.</p>	<p><u>(r) Hoisting personnel for marine transfer. When hoisting employees solely for transfer to or from a marine worksite, the following requirements shall be met:</u></p> <p><u>(1) The employee shall be in either a personnel platform or a personnel transfer device.</u></p> <p><u>(2) If using a personnel platform, subsections (a) through (n) of this section apply.</u></p> <p><u>(3) If using a personnel transfer device:</u></p> <p><u>(A) The following subsections apply: (c), (d)(1), (d)(3), (d)(4), (d)(5)(A) and (C), (f)(1) through (f)(3), (f)(6), (g)(8), (g)(9), (h)(1), (i), (j), (k)(5) through (k)(8), (l), (m), and (n). Where the terms “personnel platform” or “platform” are used in these subsections, replace them with “marine-hoisted personnel transfer device.”</u></p> <p><u>(B) The transfer device shall be used only for transferring workers.</u></p> <p><u>(C) The number of workers occupying the transfer device shall not exceed the maximum number it was designed to hold.</u></p> <p><u>(D) Each employee shall wear a U.S. Coast Guard personal flotation device approved for industrial use.</u></p>	<p>An AC determined that the second sentence of the federal verbiage was vague and unenforceable.</p>
<p>(s) Hoisting personnel for storage-tank (steel or concrete), shaft and chimney operations. When hoisting an employee in storage tank (steel or concrete), shaft and chimney operations, the following requirements must be met:</p> <p>(1) The employee must be in a personnel</p>	<p><u>(s) Hoisting personnel for storage-tank (steel or concrete), shaft and chimney operations. When hoisting an employee in storage tank (steel or concrete), shaft and chimney operations, the following requirements shall be met:</u></p> <p><u>(1) The employee shall be in a personnel</u></p>	<p>Repetitive requirements were condensed by using cross-reference to (o)(3) subsections (above).</p>

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<p>platform except when the employer can demonstrate that use of a personnel platform is infeasible; in such a case, a boatswain’s chair must be used.</p> <p>(2) If using a personnel platform, paragraphs (a) through (n) of this section apply.</p> <p>(3) If using a boatswain’s chair:</p> <p>(i) The following paragraphs of this section apply: (a), (c), (d)(1), (d)(3), (d)(4), (e)(1), (e)(2), (e)(3), (f)(1), (f)(2)(i), (f)(3)(i), (g), (h), (k)(1), (k)(6), (k)(8), (k)(9), (k)(11)(i), (m), (n). Where the terms “personnel platform” or “platform” are used in these paragraphs, substitute them with “boatswains chair.”</p> <p>(ii) The employee must be hoisted in a slow, controlled descent and ascent.</p> <p>(iii) The employee must use personal fall protection equipment, including a full body harness, attached independent of the crane/derrick. When there is no adequate structure for attachment of personal fall arrest equipment as required in § 1926.502(d)(15), the attachment must be to the lower load block or overhaul ball.</p> <p>(iv) The fall protection equipment must meet the applicable requirements in § 1926.502.</p> <p>(v) The boatswain’s chair itself (excluding the personal fall arrest system anchorages), must be capable of supporting, without failure, its own weight and at least five times the maximum intended load.</p> <p>(vi) No more than one person must be hoisted at a time.</p>	<p><u>platform except when the employer can demonstrate that use of a personnel platform is infeasible; in such a case, a boatswain’s chair shall be used.</u></p> <p><u>(2) If using a personnel platform, subsections (a) through (n) of this section apply.</u></p> <p><u>(3) If using a boatswain’s chair the provisions of subsection (o)(3)(A), (C), (D), (E), (F) and (G) shall apply. Where the terms “personnel platform” or “platform” are used in these subsections, substitute them with “boatswains chair.”</u></p> <p><u>(4) When there is no adequate structure for attachment of required personal fall arrest equipment, the attachment shall be to the lower load block or overhaul ball.</u></p>	
<p>§ 1926.1432 Multiple-crane/derrick lifts—</p>	<p>§4994. Hoisting.</p>	<p>▪ Amend Section 4994 with federal.</p>

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<p>supplemental requirements.</p>		<ul style="list-style-type: none"> ▪ ▪
<p>(a) Plan development. Before beginning a crane/derrick operation in which more than one crane/derrick will be supporting the load, the operation must be planned. The planning must meet the following requirements: (1) The plan must be developed by a qualified person. (2) The plan must be designed to ensure that the requirements of this subpart are met. (3) Where the qualified person determines that engineering expertise is needed for the planning, the employer must ensure that it is provided.</p>	<p><u>(f) Multiple crane/derrick lifts – Supplemental requirements.</u> <u>(1) Plan development. Before beginning a crane/derrick operation in which more than one crane/derrick will be supporting the load, the operation must be planned. The planning shall meet the following requirements:</u> <u>(A) The plan shall be developed by a qualified person.</u> <u>(B) The plan shall be designed to ensure that the requirements of these Orders are met.</u> <u>(C) Where the qualified person determines that engineering expertise is needed for the planning, the employer shall ensure that it is provided.</u></p>	
<p>(b) Plan implementation. (1) The multiple-crane/derrick lift must be directed by a person who meets the criteria for both a competent person and a qualified person, or by a competent person who is assisted by one or more qualified persons (lift director). (2) The lift director must review the plan in a meeting with all workers who will be involved with the operation.</p>	<p><u>(2) Plan implementation.</u> <u>(A) The multiple-crane/derrick lift shall be directed by a person (lift director) who meets the criteria for both a competent person and a qualified person.</u> <u>(B) The lift director shall review the plan in a meeting with all workers who will be involved with the operation.</u></p>	
<p>§ 1926.1433 Design, construction and testing.</p>	<p><u>§4884. Scope Standards Incorporated by Reference.</u></p>	
<p>The following requirements apply to equipment that has a manufacturer-rated hoisting/lifting capacity of more than 2,000 pounds.</p>	<p><u>(a) Cranes and derricks shall be designed, constructed, and installed in accordance with the following standards which are hereby</u></p>	<p>See proposed Section 4883 for 2000# or less.</p>

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	<p><u>incorporated by reference. Unless specified otherwise in this Group, these requirements apply to equipment that has a manufacturer-rated hoisting/lifting capacity of more than 2,000 pounds.</u></p>	
<p>(a) Crawler, truck and locomotive cranes manufactured prior to November 8, 2010 must meet the applicable requirements for design, construction, and testing as prescribed in ANSI B30.5–1968 (incorporated by reference, see § 1926.6), PCSA Std. No. 2 (1968) (incorporated by reference, see § 1926.6), the requirements in paragraph (b) of this section, or the applicable DIN standards that were in effect at the time of manufacture.</p>	<p>§4884(c)(1)(B) Cranes and derricks manufactured after June 23, 1999 <u>and before July 7, 2011</u> shall be designed, constructed and installed in accordance with the following applicable American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) standards which are hereby incorporated by reference: *** B30.5-1994, Mobile and Locomotive Cranes ***</p>	<p>GISO Section 4884 prescribes more recent editions (prior to November 8, 2010). This subsection references standards in effect in CA prior to adoption of the federal rulemaking.</p> <p>Section 4884(e)(1) prescribes B30.5-1968 for cranes and derricks manufactured prior to September 28, 1986. Other sections prescribe more recent editions of B30.5 prior to the federal effective date; therefore CA is ALAEA.</p>
<p>(b) Mobile (including crawler and truck) and locomotive cranes manufactured on or after November 8, 2010 must meet the following portions of ASME B30.5–2004 (incorporated by reference, see § 1926.6) as applicable: (1) In section 5–1.1.1 (“Load Ratings—Where Stability Governs Lifting Performance”), paragraphs (a)—(d) (including subparagraphs). (2) In section 5–1.1.2 (“Load Ratings—Where Structural Competence Governs Lifting Performance”), paragraph (b). (3) Section 5–1.2 (“Stability (Backward and Forward)”).</p>	<p>§4884(d) Cranes and derricks <u>manufactured after July 7, 2011, until [OAL to insert effective date here]</u> shall be designed, constructed and installed in accordance with the following applicable American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) standards which are hereby incorporated by reference: *** B30.5–2004, Mobile and Locomotive Cranes</p>	<p>July 7, 2011, is CA effective date for cranes in construction and is being brought forward from CSO Section 1610.4(b) which was previously approved by OSHA.</p>
<p>(4) In section 5–1.3.1 (“Boom Hoist Mechanism”), paragraphs (a), (b)(1) and (b)(2),</p>		<p>Typo at federal (b)(4) – should read “§1926.1414(e)(4)(ii)(A) applies.”</p>

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<p>except that when using rotation resistant rope, § 1926.1414(c)(4)(ii)(A) applies.</p>		<p>CA requires compliance with all sections of B30.5.</p>
<p>(5) In section 5–1.3.2 (“Load Hoist Mechanism”), paragraphs (a)(2) through (a)(4) (including subparagraphs), (b) (including subparagraphs), (c) (first sentence only) and (d). (6) Section 5–1.3.3 (“Telescoping Boom”). (7) Section 5–1.4 (“Swing Mechanism”). (8) In section 5–1.5 (“Crane Travel”), all provisions except 5–1.5.3(d). (9) In section 5–1.6 (“Controls”), all provisions except 5–1.6.1 (c). (10) Section 5–1.7.4 (“Sheaves”). (11) Section 5–1.7.5 (“Sheave sizes”). (12) In section 5–1.9.1 (“Booms”), paragraph (f). (13) Section 5–1.9.3 (“Outriggers”). (14) Section 5–1.9.4 (“Locomotive Crane Equipment”). (15) Section 5–1.9.7 (“Clutch and Brake Protection”). (16) In section 5–1.9.11 (“Miscellaneous equipment”), paragraphs (a), (c), (e), and (f).</p>		<p>CA requires compliance design, construction and installation standards of B30.5.</p>
<p>(c) Prototype testing: mobile (including crawler and truck) and locomotive cranes manufactured on or after November 8, 2010 must meet the prototype testing requirements in Test Option A or Test Option B of this section. Tower cranes manufactured on or after November 8, 2010 must meet the prototype testing requirements in BS EN 14439:2006 (incorporated by reference, see § 1926.6).</p>	<p><u>§4884(j) Prototype testing: Cranes manufactured on or after November 8, 2010, shall meet the prototype testing requirements prescribed in 29 CFR 1926.1433(c).</u></p>	<p>Since any cranes manufactured in California are extremely likely to be used in interstate commerce, California proposes to reference federal standards for prototype testing, including the federal effective date.</p>

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Note: Prototype testing of crawler, locomotive and truck cranes manufactured prior to November 8, 2010 must conform to paragraph (a) of this section.

(1) Test Option A.

(i) The following applies to equipment with cantilevered booms (such as hydraulic boom cranes): All the tests listed in SAE J1063 (Nov. 1993) Table 1 (incorporated by reference, see § 1926.6) must be performed to load all critical structural elements to their respective limits. All the strength margins listed in SAE J1063 (Nov. 1993) Table 2 (incorporated by reference, see § 1926.6) must be met.

(ii) The following applies to equipment with pendant supported lattice booms: All the tests listed in SAE J987 (Jun. 2003) Table 1 (incorporated by reference, see § 1926.6) must be performed to load all critical structural elements to their respective limits. All the strength margins listed in SAE J987 (Jun. 2003) Table 2 (incorporated by reference, see § 1926.6) must be met.

(2) Test Option B. The testing and verification requirements of BS EN 13000:2004 (incorporated by reference, see § 1926.6) must be met. In applying BS EN 13000:2004, the following additional requirements must be met:

(i) The following applies to equipment with cantilevered booms (such as hydraulic boom cranes): The analysis methodology (computer modeling) must demonstrate that all load cases listed in SAE J1063 (Nov. 1993) (incorporated by reference, see § 1926.6) meet the strength margins listed in SAE J1063 (Nov. 1993) Table

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<p>2. (ii) The following applies to equipment with pendant supported lattice booms: The analysis methodology (computer modeling) must demonstrate that all load cases listed in SAE J987 (Jun. 2003) (incorporated by reference, see § 1926.6) meet the strength margins listed in SAE J987 (Jun. 2003) Table 2. (iii) Analysis verification. The physical testing requirements under SAE J1063 (Nov. 1993) (incorporated by reference, see § 1926.6) and SAE J987 (Jun. 2003) (incorporated by reference, see § 1926.6) must be met unless the reliability of the analysis methodology (computer modeling) has been demonstrated by a documented history of verification through strain gauge measuring or strain gauge measuring in combination with other physical testing.</p>		
<p>(d) All equipment covered by this subpart must meet the following requirements: (1) Rated capacity and related information. The information available in the cab (see § 1926.1417(c)) regarding “rated capacity” and related information must include, at a minimum, the following information: (i) A complete range of the manufacturer’s equipment rated capacities, as follows: (A) At all manufacturer approved operating radii, boom angles, work areas, boom lengths and configurations, jib lengths and angles (or offset). (B) Alternate ratings for use and nonuse of option equipment which affects rated capacities,</p>		<p>These federal requirements apply to mobile cranes. Title 8, Article 92 contains requirements for cranes (except boom type mobile), Article 93 is for boom-type mobile, Article 96 is for tower cranes. Each article contains crane type-specific requirements, thus it is not necessary to repeat them here.</p>

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such as outriggers, stabilizers, and extra counterweights.

(ii) A work area chart for which capacities are listed in the load chart.
(Note: An example of this type of chart is in ASME B30.5–2004, section 5–1.1.3, Figure 11).

(iii) The work area figure and load chart must clearly indicate the areas where no load is to be handled.

(iv) Recommended reeving for the hoist lines must be shown.

(v) Recommended parts of hoist reeving, size, and type of wire rope for various equipment loads.

(vi) Recommended boom hoist reeving diagram, where applicable; size, type and length of wire rope.

(vii) Tire pressure (where applicable).

(viii) Caution or warnings relative to limitations on equipment and operating procedures, including an indication of the least stable direction.

(ix) Position of the gantry and requirements for intermediate boom suspension (where applicable).

(x) Instructions for boom erection and conditions under which the boom, or boom and jib combinations, may be raised or lowered.

(xi) Whether the hoist holding mechanism is automatically or manually controlled, whether free fall is available, or any combination of these.

(xii) The maximum telescopic travel length of each boom telescopic section.

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<p>(xiii) Whether sections are telescoped manually or with power.</p> <p>(xiv) The sequence and procedure for extending and retracting the telescopic boom section.</p> <p>(xv) Maximum loads permitted during the boom extending operation, and any limiting conditions or cautions.</p> <p>(xvi) Hydraulic relief valve settings specified by the manufacturer.</p>		
<p>(2) Load hooks (including latched and unlatched types), ball assemblies and load blocks must be of sufficient weight to overhaul the line from the highest hook position for boom or boom and jib lengths and the number of parts of the line in use.</p>	<p><u>§4881(c) Load hooks, ball assemblies and load blocks shall be of sufficient weight to overhaul the line from the highest hook position for boom or boom and jib lengths and the number of parts of the line in use.</u></p>	
<p>(3) Hook and ball assemblies and load blocks must be marked with their rated capacity and weight.</p>	<p><u>(d) Hook and ball assemblies, load blocks.</u></p> <p><u>(1) Hook and ball assemblies and load blocks on mobile cranes shall be marked with their rated capacity and weight.</u></p>	
<p>(4) Latching hooks.</p> <p>(i) Hooks must be equipped with latches, except where the requirements of paragraph (d)(4)(ii) of this section are met.</p> <p>(ii) Hooks without latches, or with latches removed or disabled, must not be used unless:</p> <p>(A) A qualified person has determined that it is safer to hoist and place the load without latches (or with the latches removed/tied-back).</p>	<p><u>(2) Hook and ball assemblies and load blocks shall be equipped with latches.</u></p> <p><u>EXCEPTION: Hooks without latches, or with latches removed or disabled, shall not be used unless a qualified person has determined that it is safer to hoist and place the load without latches (or with the latches removed/tied-back).</u></p>	<p>Exception added to permit “shake-out” for steel erection. [AC1]</p>

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<p>(B) Routes for the loads are preplanned to ensure that no employee is required to work in the fall zone except for employees necessary for the hooking or unhooking of the load.</p>	<p>§5002. Overhead Loads. <u>(a)</u> Operations shall be conducted and the job controlled in a manner that will avoid exposure of employees to the hazard of overhead loads. Wherever loads must be passed directly over workers, occupied work spaces or occupied passageways, safety type hooks or equivalent means of preventing the loads from becoming disengaged shall be used. NOTE: Employees should not work in the area directly beneath a suspended load.</p>	<p>Note replaced with new Section 5002(b).</p>
<p>(iii) The latch must close the throat opening and be designed to retain slings or other lifting devices/accessories in the hook when the rigging apparatus is slack.</p>	<p><u>§4881(d)(2) Hook and ball assemblies and load blocks shall be equipped with latches.</u> <u>EXCEPTION: Hooks without latches, or with latches removed or disabled, shall not be used unless a qualified person has determined that it is safer to hoist and place the load without latches (or with the latches removed/tied-back).</u></p>	<p>Exception added to permit “shake-out” for steel erection. [AC1]</p>
<p>(5) Posted warnings. Posted warnings required by this subpart as well as those originally supplied with the equipment by the manufacturer must be maintained in legible condition.</p>	<p><u>§4881(a) Posted warnings. Posted warnings required by Group 13 as well as those supplied with the equipment by the manufacturer shall be maintained in legible condition.</u></p>	<p>See Sections 4907, 4923, 4961, and 4965 for crane-specific requirements.</p>
<p>(6) An accessible fire extinguisher must be on the equipment.</p>	<p>§4997. Fire Extinguisher. A fire extinguisher of not less than 10-B:C rating shall be kept in serviceable condition and readily accessible to the operator's station, and affected personnel shall be familiarized with its use.</p>	
<p>(7) Cabs. Equipment with cabs must meet the</p>	<p><u>§4881(e) Cabs (Supplemental requirements for</u></p>	<p>Some of these requirements exceed B30</p>

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<p>following requirements: (i) Cabs must be designed with a form of adjustable ventilation and method for clearing the windshield for maintaining visibility and air circulation. Examples of means for adjustable ventilation include air conditioner or window that can be opened (for ventilation and air circulation); examples of means for maintaining visibility include heater (for preventing windshield icing), defroster, fan, windshield wiper. (ii) Cab doors (swinging, sliding) must be designed to prevent inadvertent opening or closing while traveling or operating the machine. Swinging doors adjacent to the operator must open outward. Sliding operator doors must open rearward.</p>	<p><u>cranes in construction).</u> <u>Equipment with cabs shall meet the following requirements:</u> <u>(1) Cabs shall be designed with a form of adjustable ventilation and method for clearing the windshield (when provided) for maintaining visibility and air circulation.</u> <u>Examples of means for adjustable ventilation may include an air conditioner or window that can be opened (for ventilation and air circulation); examples of means for maintaining visibility may include heater (for preventing windshield icing), defroster, fan, or windshield wiper.</u> <u>(2) Cab doors (swinging, sliding) shall be designed to prevent inadvertent opening or closing while traveling or operating the machine. Swinging doors adjacent to the operator shall open outward. Sliding operator doors shall open rearward.</u></p>	<p>standards and existing GISO provisions which apply to general industry, thus they have been identified as supplemental requirements for cranes in construction.</p>
<p>(iii) Windows. (A) The cab must have windows in front and on both sides of the operator. Forward vertical visibility must be sufficient to give the operator a view of the boom point at all times.</p>	<p><u>(3) Windows (if provided) or other openings.</u> <u>(A) Windows or other openings shall be provided in front and on both sides of the operator with visibility forward and to either side. Forward vertical visibility shall be sufficient to give the operator a view of the boom point at all times.</u></p>	<p>AC1 mods.</p>
<p>(B) Windows may have sections designed to be opened or readily removed. Windows with sections designed to be opened must be designed so that they can be secured to prevent inadvertent closure. (C) Windows must be of safety glass or material</p>	<p><u>(B) Windows may have sections designed to be opened or readily removed. Windows with sections designed to be opened shall be designed so that they can be secured to prevent inadvertent closure.</u> <u>(C) Windows shall be of safety glass or</u></p>	<p>Section 4925(b) contains similar requirements for mobile cranes; however, Section 4881(e) will apply to tower cranes or other cranes with cabs as well.</p>

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<p>with similar optical and safety properties, that introduce no visible distortion or otherwise obscure visibility that interferes with the safe operation of the equipment.</p>	<p><u>material with similar optical and safety properties, which introduce no visible distortion or otherwise obscure visibility that interferes with the safe operation of the equipment.</u></p>	
<p>(iv) A clear passageway must be provided from the operator's station to an exit door on the operator's side.</p>	<p><u>(4) A clear passageway shall be provided from the operator's station to an exit door on the operator's side.</u></p>	
<p>(v) Areas of the cab roof that serve as a workstation for rigging, maintenance or other equipment-related tasks must be capable of supporting 250 pounds without permanent distortion.</p>	<p><u>(5) Areas of the cab roof that serve as a workstation for rigging, maintenance or other equipment-related tasks shall be capable of supporting 250 pounds.</u></p>	
<p>(8) Belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, and other parts or components that reciprocate, rotate or otherwise move must be guarded where contact by employees (except for maintenance and repair employees) is possible in the performance of normal duties.</p>		<p>This is a requirement of ASME B30 standards which have been incorporated by reference in Section 4884.</p>
<p>(9) All exhaust pipes, turbochargers, and charge air coolers must be insulated or guarded where contact by employees (except for maintenance and repair employees) is possible in the performance of normal duties.</p>	<p><u>§4881(b) All exhaust pipes, turbochargers, and charge air coolers shall be insulated or guarded where inadvertent contact by employees (except for maintenance and repair employees) is possible in the performance of normal duties.</u></p>	
<p>(10) Hydraulic and pneumatic lines must be protected from damage to the extent feasible.</p>		<p>This is a requirement of ASME B30 standards which have been incorporated by reference in Section 4884.</p>
<p>(11) The equipment must be designed so that</p>		<p>This is a requirement of ASME B30 standards</p>

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<p>exhaust fumes are not discharged in the cab and are discharged in a direction away from the operator.</p>		<p>which have been incorporated by reference in Section 4884.</p>
<p>(12) Friction mechanisms. Where friction mechanisms (such as brakes and clutches) are used to control the boom hoist or load line hoist, they must be: (i) Of a size and thermal capacity sufficient to control all rated loads with the minimum recommended reeving. (ii) Adjustable to permit compensation for lining wear to maintain proper operation.</p>	<p><u>§4949(e) Friction mechanisms. Where friction mechanisms (such as brakes and clutches) are used to control the boom hoist or load line hoist, they shall be:</u> <u>(1) Of a size and thermal capacity sufficient to control all rated loads with the minimum recommended reeving.</u> <u>(2) Adjustable to permit compensation for lining wear to maintain proper operation.</u></p>	
<p>(13) Hydraulic load hoists. Hydraulic drums must have an integrally mounted holding device or internal static brake to prevent load hoist movement in the event of hydraulic failure.</p>	<p><u>(f) Hydraulic load hoists. Hydraulic drums shall have an integrally mounted holding device or internal static brake to prevent load hoist movement in the event of hydraulic failure.</u></p>	
<p>(e) The employer's obligations under paragraphs (a) through (c) and (d)(7) through (13) of this section are met where the equipment has not changed (except in accordance with § 1926.1434 (Equipment modifications)) and it can refer to documentation from the manufacturer showing that the equipment has been designed, constructed and tested in accordance with those paragraphs.</p>		<p>Rather than rely on manufacturer's documentation which may or may not be available, CA verifies compliance with these requirements using frequent inspections as prescribed in Section 5031.</p>
<p>§ 1926.1434 Equipment modifications.</p>	<p><u>§4884.1. Equipment Modifications – Mobile and Tower Cranes.</u></p>	
<p>(a) Modifications or additions which affect the capacity or safe operation of the equipment are</p>	<p><u>(a) Modifications or additions which affect the capacity or safe operation of the equipment are</u></p>	

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<p>prohibited except where the requirements of paragraphs (a)(1), (a)(2), (a)(3), (a)(4), or (a)(5) of this section are met.</p>	<p><u>prohibited except where the requirements of subsections (a)(1) or (a)(2) are met.</u></p>	
<p>(1) Manufacturer review and approval. (i) The manufacturer approves the modifications/additions in writing. (ii) The load charts, procedures, instruction manuals and instruction plates/tags/decals are modified as necessary to accord with the modification/addition. (iii) The original safety factor of the equipment is not reduced.</p>	<p><u>(1) Manufacturer review and approval.</u> <u>(A) The manufacturer approves the modifications/additions in writing.</u> <u>(B) The load charts, procedures, instruction manuals and instruction plates/tags/decals are modified as necessary to accord with the modification/addition.</u> <u>(C) The original safety factors of the equipment are not reduced.</u></p>	
<p>(2) Manufacturer refusal to review request. The manufacturer is provided a detailed description of the proposed modification/addition, is asked to approve the modification/addition, but it declines to review the technical merits of the proposal or fails, within 30 days, to acknowledge the request or initiate the review, and all of the following are met: (i) A registered professional engineer who is a qualified person with respect to the equipment involved: (A) Approves the modification/addition and specifies the equipment configurations to which that approval applies, and (B) Modifies load charts, procedures, instruction manuals and instruction plates/tags/decals as necessary to accord with the modification/addition. (ii) The original safety factor of the equipment is not reduced.</p>		<p>This option not allowed in CA. CA is more protective.</p>

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<p>(3) Unavailable manufacturer. The manufacturer is unavailable and the requirements of paragraphs (a)(2)(i) and (ii) of this section are met.</p>	<p><u>(2) Unavailable manufacturer. The manufacturer is unavailable and the following requirements are met:</u> <u>(A) A certified agent who is a qualified person with respect to the equipment involved:</u> <u>1. Approves the modification/addition and specifies the equipment configurations to which that approval applies, and</u> <u>2. Modifies load charts, procedures, instruction manuals and instruction plates/tags/decals as necessary to accord with the modification/addition.</u> <u>(B) The original safety factor of the equipment is not reduced.</u></p>	<p>Fed paragraphs (a)(2)(i) and (ii) are spelled-out here.</p>
<p>(4) Manufacturer does not complete the review within 120 days of the request. The manufacturer is provided a detailed description of the proposed modification/addition, is asked to approve the modification/addition, agrees to review the technical merits of the proposal, but fails to complete the review of the proposal within 120 days of the date it was provided the detailed description of the proposed modification/addition, and the requirements of paragraphs (a)(2)(i) and (ii) of this section are met.</p>		<p>Not allowed. CA is more protective.</p>
<p>(5) Multiple manufacturers of equipment designed for use on marine work sites. The equipment is designed for marine work sites, contains major structural components from more than one manufacturer, and the requirements of paragraphs (a)(2)(i) and (ii) of this section are met.</p>		<p>This option is covered by (a)(1) and (a)(2) above.</p>

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<p>(b) Modifications or additions which affect the capacity or safe operation of the equipment are prohibited where the manufacturer, after a review of the technical safety merits of the proposed modification/addition, rejects the proposal and explains the reasons for the rejection in a written response. If the manufacturer rejects the proposal but does not explain the reasons for the rejection in writing, the employer may treat this as a manufacturer refusal to review the request under paragraph (a)(2) of this section.</p>		<p>Not allowed. CA is more protective.</p>
<p>(c) The provisions in paragraphs (a) and (b) of this section do not apply to modifications made or approved by the U.S. military.</p>		<p>The California Occupational Safety and Health program does not have jurisdiction over the U.S. Military.</p>
<p>§ 1926.1435 Tower cranes.</p>	<p>Article 96. Tower Cranes.</p>	
<p>(a) This section contains supplemental requirements for tower cranes; all sections of this subpart apply to tower cranes unless specified otherwise.</p>	<p>§4965. General. (a) The requirements of this Article shall apply to cranes of the general type such as those having a revolving boom with counterweight on a single vertical mast, and mobile tower cranes.</p>	<p>GISO standards are horizontal, so Article 96 supplements other applicable parts of Group 13.</p>
<p>(b) Erecting, climbing and dismantling. (1) Section 1926.1403 (Assembly/Disassembly—selection of manufacturer or employer procedures), § 1926.1404 (Assembly/Disassembly—general requirements (applies to all assembly and disassembly operations)), § 1926.1405 (Disassembly—additional requirements for dismantling of</p>	<p>§4966. Erecting, <u>Climbing</u>, Dismantling and Operation. (a) <u>Erection, Climbing</u> and Dismantling. (1) The erection, climbing (up and down) and dismantling of a fixed tower crane shall comply with the requirements of Title 8, Section 341.1(b)(2), <u>Sections 5010 through 5010.3 and other provisions of these Safety</u></p>	<p>Federal 1926.1403=Section 5010. Federal 1926.1404=Section 5010.1 Federal 1926.1405=Section 5010.2 Federal 1926.1406=Section 5010.3 Due to state formatting there is no need to spell-out these cross references here as the state sections are in Article 98 which applies to all</p>

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<p>booms and jibs (applies to both the use of manufacturer procedures and employer procedures)), and § 1926.1406 (Assembly/Disassembly—employer procedures—general requirements), apply to tower cranes (except as otherwise specified), except that the term “assembly/disassembly” is replaced by “erecting, climbing and dismantling,” and the term “disassembly” is replaced by “dismantling.”</p>	<p><u>Orders as applicable.</u> ***</p>	<p>types of cranes, including tower cranes.</p>
<p>(2) Dangerous areas (self-erecting tower cranes). In addition to the requirements in § 1926.1404(e), for self-erecting tower cranes, the following applies: Employees must not be in or under the tower, jib, or rotating portion of the crane during erecting, climbing and dismantling operations until the crane is secured in a locked position and the competent person in charge indicates it is safe to enter this area, unless the manufacturer’s instructions direct otherwise and only the necessary personnel are permitted in this area.</p>	<p><u>(i) Dangerous areas.</u> <u>(1) Only employees directly involved in the erection, climbing, and dismantling operations of tower cranes are allowed to work in the area under the tower, jib, or rotating portion of the crane during these operations.</u> <u>(2) Additional requirements for self-erecting tower cranes: Employees shall not be in or under the tower, jib, or rotating portion of the crane during erecting, climbing and dismantling operations until the crane is secured in a locked position and the competent person in charge indicates it is safe to enter this area, unless the manufacturer’s instructions direct otherwise and only the necessary personnel are permitted in this area.</u></p>	<p>Reference to 1926.1410(e) [5010(e)] has already been made in Section 4966(a) and does not need to be repeated here (CA formatting).</p>
<p>(3) Foundations and structural supports. Tower crane foundations and structural supports (including both the portions of the structure used for support and the means of attachment) must be designed by the manufacturer or a registered professional engineer.</p>	<p>§4966(d) Where the vertical load of the crane assembly is supported by the edges of floor openings of a structure, measures shall be taken <u>Tower crane foundations and structural supports (including both the portions of the</u></p>	<p>The manufacturer is a certified agent. A certified agent is also a RPE.</p>

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	<p><u>structure used for support and the means of attachment) shall be designed by a certified agent to prevent structural damage of such support.</u></p>	
	<p><u>(1) The controlling entity shall ensure the tower crane foundations and structural supports are installed in accordance with the manufacturer's or certified agent's instructions.</u> <u>(2) The controlling entity shall provide a written statement of compliance with subsection (d)(1), to the erecting entity prior to erection or jump of the tower crane.</u> <u>(3) The top of the support/foundation shall be accessible and free of debris, materials and standing water. No materials shall be stored on the support unless approved by a qualified person. The foundation and fasteners shall remain accessible and visible for inspection at all times.</u></p>	<p>No federal counterpart for these subsections proposed to be relocated from Section 1619.1(b)(3)(A)-(C) as part of the consolidation RM. They are the result of input from a CSO Article 15 “clean-up” advisory committee. These modifications to the CSO were heard 6/21/2012 and adopted 8/16/2012 into the CSO.</p>
<p>(4) Addressing specific hazards. The requirements in § 1926.1404(h)(1) through (9) apply. In addition, the A/D director must address the following: (i) Foundations and structural supports. The A/D director must determine that tower crane foundations and structural supports are installed in accordance with their design.</p>	<p>§4966(j) <u>Addressing specific hazards. In addition to the requirements in Section 5010.1(h)(1) through (9), the A/D director shall confirm the following:</u> <u>(1) Foundations and structural supports. Prior to erection/installation of tie-ins, the controlling entity shall provide documentation to the A/D director that tower crane foundations and structural supports are installed in accordance with the design.</u></p>	<p>AC consensus.</p>
<p>(ii) Loss of backward stability. Backward stability before swinging self erecting cranes or cranes on traveling or static undercarriages.</p>	<p><u>(2) Backward stability. All cranes shall be ballasted or counterweighted in accordance with the manufacturer’s recommendation to</u></p>	<p>AC consensus.</p>

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	<u>ensure stability.</u>	
(iii) Wind speed. Wind must not exceed the speed recommended by the manufacturer or, where manufacturer does not specify this information, the speed determined by a qualified person.	<u>(3) Wind speed. Operations shall not be conducted when wind speed exceeds the speed tolerance recommended by the manufacturer or, where the manufacturer does not specify this information, the speed tolerance shall be determined by a qualified person.</u>	AC consensus.
(5) Plumb tolerance. Towers must be erected plumb to the manufacturer's tolerance and verified by a qualified person. Where the manufacturer does not specify plumb tolerance, the crane tower must be plumb to a tolerance of at least 1:500 (approximately 1 inch in 40 feet).	<u>(k) Plumb tolerance. Towers shall be erected plumb in accordance with the manufacturer's specifications and verified by a qualified person. Where the manufacturer does not specify plumb tolerance, the crane tower shall be plumb to a tolerance within 1:500 (approximately 1 inch in 40 feet).</u>	AC consensus.
(6) Multiple tower crane jobsites. On jobsites where more than one fixed jib (hammerhead) tower crane is installed, the cranes must be located such that no crane can come in contact with the structure of another crane. Cranes are permitted to pass over one another.	<u>(l) Multiple tower crane jobsites. Where more than one fixed jib (hammerhead) tower crane is installed, the cranes shall be located such that the structural members of the cranes cannot come in contact with one another. Cranes are permitted to pass over one another.</u>	AC consensus.
(7) Climbing procedures. Prior to, and during, all climbing procedures (including inside climbing and top climbing), the employer must: (i) Comply with all manufacturer prohibitions. (ii) Have a registered professional engineer verify that the host structure is strong enough to sustain the forces imposed through the braces, brace anchorages and supporting floors.	<u>(e) When the mast sections are raised to a new position, measures shall be taken to prevent damage or collapse of the crane assembly including vertical slippage of the mast unit. (1) Climbing procedures. Prior to, and during, all climbing procedures (including inside climbing and top climbing), the employer shall: (A) Comply with all manufacturer prohibitions. (B) Have a certified agent verify that the host structure is strong enough to sustain the forces</u>	

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	<u>imposed through the braces, brace anchorages and supporting floors.</u>	
(8) Counterweight/ballast. (i) Equipment must not be erected, dismantled or operated without the amount and position of counterweight and/or ballast in place as specified by the manufacturer or a registered professional engineer familiar with the equipment. (ii) The maximum counterweight and/or ballast specified by the manufacturer or registered professional engineer familiar with the equipment must not be exceeded.	§4966(m) <u>Counterweight/ballast.</u> (1) <u>Equipment shall not be erected, dismantled or operated without the amount and position of counterweight and/or ballast in place as specified by the manufacturer or a certified agent familiar with the equipment.</u> (2) <u>The maximum counterweight and/or ballast specified by the manufacturer or certified agent familiar with the equipment shall not be exceeded.</u>	
(c) Signs. The size and location of signs installed on tower cranes must be in accordance with manufacturer specifications. Where these are unavailable, a registered professional engineer familiar with the type of equipment involved must approve in writing the size and location of any signs.	4965(h) <u>Signs. The size and location of signs installed on tower cranes shall be in accordance with manufacturer specifications. Where these are unavailable, a certified agent familiar with the type of equipment involved shall approve in writing the size and location of any signs.</u>	
(d) Safety devices. (1) Section 1926.1415 does not apply to tower cranes. (2) The following safety devices are required on all tower cranes unless otherwise specified:	§4968. Safety Devices. <u>NOTE: Section 5017 (Safety Devices) does not apply to tower cranes.</u> All tower cranes shall have the following safety devices: ***	
(i) Boom stops on luffing boom type tower cranes.	<u>(h) Boom stops on luffing boom type tower cranes.</u>	
(ii) Jib stops on luffing boom type tower cranes if equipped with a jib attachment.	<u>(i) Jib stops on luffing boom type tower cranes if equipped with a jib attachment.</u>	

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(iii) Travel rail end stops at both ends of travel rail.	<u>(k) Cranes mounted on rail tracks shall be equipped with:</u> <u>(1) Limit switches limiting the travel of the crane on the track, and end stops or buffers at each end of the tracks.</u>	Relocated from Section 4965(h) to place in safety devices.
(iv) Travel rail clamps on all travel bogies.	<u>(k)(2) Travel rail clamps on all travel bogies.</u>	
(v) Integrally mounted check valves on all load supporting hydraulic cylinders.	<u>(l) Integrally mounted check valves on all load supporting hydraulic cylinders.</u>	
(vi) Hydraulic system pressure limiting device.	<u>(m) Hydraulic system pressure limiting device.</u>	
(vii) The following brakes, which must automatically set in the event of pressure loss or power failure, are required: (A) A hoist brake on all hoists. (B) Swing brake. (C) Trolley brake. (D) Rail travel brake.	<u>(n) The following brakes, which shall automatically set in the event of pressure loss or power failure, are required:</u> <u>(1) A hoist brake on all hoists.</u> <u>(2) Swing brake.</u> <u>(3) Trolley brake.</u> <u>(4) Rail travel brake.</u>	
(viii) Deadman control or forced neutral return control (hand) levers.	<u>(g) Constant pressure control devices which automatically return to neutral or the "off" position when released by the operator.</u>	
(ix) Emergency stop switch at the operator's station.	<u>(o) Emergency stop switch at the operator's station.</u>	
(x) Trolley end stops must be provided at both ends of travel of the trolley.	<u>(j) Trolley end stops shall be provided at both ends of travel of the trolley.</u>	
(3) Proper operation required. Operations must not begin unless the devices listed in this section are in proper working	<u>§4968.1. Safety Devices - Proper Operation Required.</u> <u>Operations shall not begin unless the devices</u>	

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<p>order. If a device stops working properly during operations, the operator must safely stop operations. The equipment must be taken out of service, and operations must not resume until the device is again working properly. See § 1926.1417(f). Alternative measures are not permitted to be used.</p>	<p><u>listed in Section 4968 are in proper working order. If a device stops working properly during operations, the operator shall safely stop operations. The equipment shall be taken out of service, and operations shall not resume until the device is again working properly. See Section 5008.1(e). Alternative measures are not permitted to be used.</u></p>	
<p>(e) Operational aids. (1) Section 1926.1416 does not apply to tower cranes. (2) The devices listed in this section (“operational aids”) are required on all tower cranes covered by this subpart, unless otherwise specified.</p>	<p><u>§4968.2. Operational Aids.</u> (a) <u>Section 5018 does not apply to tower cranes.</u> (b) <u>The devices listed in this section (“operational aids”) are required on all tower cranes covered by Group 13, unless otherwise specified.</u></p>	
<p>(3) Operations must not begin unless the operational aids are in proper working order, except where the employer meets the specified temporary alternative measures. More protective alternative measures specified by the tower crane manufacturer, if any, must be followed. See § 1926.1417(j) for additional requirements. (4) If an operational aid stops working properly during operations, the operator must safely stop operations until the temporary alternative measures are implemented or the device is again working properly. If a replacement part is no longer available, the use of a substitute device that performs the same type of function is permitted and is not considered a modification under § 1926.1434.</p>	<p><u>(c) Operations shall not begin unless the operational aids are in proper working order. If a listed operational aid stops working properly during operations, the operator shall safely stop operations until the device is repaired, or the device is again working properly.</u> (1) <u>Any replacement part or device utilized shall perform the same type function as permitted subject to the provisions of Section 4884.1.</u> (2) <u>See Section 5008.1(g) for additional requirements.</u> (3) <u>Temporary operations are permitted where the employer meets the specified temporary alternative measures; however more protective alternative measures specified by the tower crane manufacturer, if any, shall be followed.</u></p>	<p>1926.1435(e)(3) and (4) combined and clarified.</p>

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<p>(5) Category I operational aids and alternative measures. Operational aids listed in this paragraph that are not working properly must be repaired no later than 7 calendar days after the deficiency occurs. Exception: If the employer documents that it has ordered the necessary parts within 7 calendar days of the occurrence of the deficiency, the repair must be completed within 7 calendar days of receipt of the parts.</p>	<p><u>(e) Operational aids and alternative measures. Operational aids listed in this section that are not working properly shall be repaired no later than 7 calendar days after the deficiency occurs subject to the provisions of subsection (c).</u></p>	<p>Use of temporary alternatives is limited to 7 days.</p>
<p>(i) Trolley travel limiting device. The travel of the trolley must be restricted at both ends of the jib by a trolley travel limiting device to prevent the trolley from running into the trolley end stops. Temporary alternative measures: (A) Option A. The trolley rope must be marked (so it can be seen by the operator) at a point that will give the operator sufficient time to stop the trolley prior to the end stops. (B) Option B. A spotter who is in direct communication with the operator must be used when operations are conducted within 10 feet of the outer or inner trolley end stops.</p>	<p>§4968 Safety Devices. *** (f) Limit devices to: *** (2) Limit the trolley traveling both in and out. <u>Prevent trolley contact with the end stops by use of a trolley travel stop limit switch.</u> *** (s)(1) <u>Trolley travel deceleration device. The trolley speed shall be automatically reduced prior to the trolley reaching the end limit in both directions to prevent trolley contact with end stops.</u></p>	<p>A trolley travel limiting device is a safety device per Section 4968. (No alternative measures permitted.)</p>
<p>(ii) Boom hoist limiting device. The range of the boom must be limited at the minimum and maximum radius. Temporary alternative measures: Clearly mark the cable (so it can be seen by the operator) at a point that will give the operator sufficient time to stop the boom hoist within the minimum and maximum boom radius, or use a spotter who is in direct communication with the operator to</p>	<p><u>§4968(f)(3) Limit the range of the boom hoist at the minimum and maximum radius.</u></p>	<p>Safety device – no temporary measures permitted.</p>

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<p>inform the operator when this point is reached.</p>		
<p>(iii) Anti two-blocking device. The tower crane must be equipped with a device which automatically prevents damage from contact between the load block, overhaul ball, or similar component, and the boom tip (or fixed upper block or similar component). The device(s) must prevent such damage at all points where two-blocking could occur. Temporary alternative measures: Clearly mark the cable (so it can be seen by the operator) at a point that will give the operator sufficient time to stop the hoist to prevent two-blocking, or use a spotter who is in direct communication with the operator to inform the operator when this point is reached.</p>	<p>§4968 Safety Devices. *** <u>(p) Anti-two-blocking device.</u></p>	<p>Anti-two-blocking device is already defined in Section 4885, so no need to repeat the definition here. Alternatives not permitted.</p>
<p>(iv) Hoist drum lower limiting device. Tower cranes manufactured after November 8, 2011 must be equipped with a device that prevents the last 2 wraps of hoist cable from being spooled off the drum. Temporary alternative measures: Mark the cable (so it can be seen by the operator) at a point that will give the operator sufficient time to stop the hoist prior to last 2 wraps of hoist cable being spooled off the drum, or use a spotter who is in direct communication with the operator to inform the operator when this point is reached</p>	<p><u>§4968.2(e)(1) Hoist drum lower limiting device.</u> <u>Tower cranes manufactured after July 7, 2012, shall be equipped with a device that prevents the last 2 wraps of hoist cable from being spooled off the drum.</u> <u>Temporary alternative measure: Mark the cable (so it can be seen by the operator) at a point that will give the operator sufficient time to stop the hoist prior to the last 2 wraps of hoist cable being spooled off the drum.</u></p>	<p>Alternatives not permitted. July 7, 2011, effective date is transferred from CSO 1619.1(e)(5)(D).</p>
<p>(v) Load moment limiting device. The tower crane must have a device that prevents moment overloading. Temporary alternative measures: A radius</p>	<p>§4968(d) <u>Load weighing and similar devices.</u> <u>The tower crane shall have:</u> <u>(1) An automatic stop that operates at a percentage of the rated load, not to exceed 105</u></p>	<p>Temporary alternative measures not allowed for safety devices.</p>

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<p>indicating device must be used (if the tower crane is not equipped with a radius indicating device, the radius must be measured to ensure the load is within the rated capacity of the crane). In addition, the weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. This information must be provided to the operator prior to the lift.</p>	<p>percent of the rated load. <u>(2) A load moment limiting device to prevent moment overloading.</u></p>	
<p>(vi) Hoist line pull limiting device. The capacity of the hoist must be limited to prevent overloading, including each individual gear ratio if equipped with a multiple speed hoist transmission. Temporary alternative measures: The operator must ensure that the weight of the load does not exceed the capacity of the hoist (including for each individual gear ratio if equipped with a multiple speed hoist transmission).</p>	<p><u>§4968(f)(4) Hoist line pull. Limit the capacity of the hoist to prevent overloading, including each individual gear ratio if equipped with a multiple speed hoist transmission by means of a hoist line pull.</u></p>	<p>Safety device – no alternative measures permitted.</p>
<p>(vii) Rail travel limiting device. The travel distance in each direction must be limited to prevent the travel bogies from running into the end stops or buffers. Temporary alternative measures: A spotter who is in direct communication with the operator must be used when operations are conducted within 10 feet of either end of the travel rail end stops; the spotter must inform the operator of the distance of the travel bogies from the end</p>	<p><u>§4968(k) Cranes mounted on rail tracks shall be equipped with:</u> <u>(1) Limit switches limiting the travel of the crane on the track, and end stops or buffers at each end of the tracks.</u> <u>(2) Travel rail clamps on all travel bogies.</u> <u>(3) Limit switches that limit travel bogies travel distance in each direction to prevent running into the end stops or buffers.</u></p>	<p>Safety device – no alternative measures permitted.</p>

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<p>stops or buffers.</p>		
<p>(viii) Boom hoist drum positive locking device and control. The boom hoist drum must be equipped with a control that will enable the operator to positively lock the boom hoist drum from the cab. Temporary alternative measures: The device must be manually set when required if an electric, hydraulic or automatic control is not functioning.</p>	<p><u>§4968(r) Boom hoist drum positive locking device and control. The boom hoist drum shall be equipped with a control that will enable the operator to positively lock the boom hoist drum from the cab.</u></p>	<p>Safety device – no alternative measures permitted.</p>
<p>(6) Category II operational aids and alternative measures. Operational aids listed in this paragraph that are not working properly must be repaired no later than 30 calendar days after the deficiency occurs. Exception: If the employer documents that it has ordered the necessary parts within 7 calendar days of the occurrence of the deficiency, and the part is not received in time to complete the repair in 30 calendar days, the repair must be completed within 7 calendar days of receipt of the parts.</p>		<p>No Category II in California (single category).</p>
<p>(i) Boom angle or hook radius indicator. (A) Luffing boom tower cranes must have a boom angle indicator readable from the operator's station. (B) Hammerhead tower cranes manufactured after November 8, 2011 must have a hook radius indicator readable from the operator's station. (C) Temporary alternative measures: Hook radii or boom angle must be determined by</p>	<p><u>§4968(q) Boom angle or hook radius indicator.</u> <u>(1) Luffing boom tower cranes shall have a boom angle or radius indicator readable from the operator's station.</u> <u>(2) Hammerhead tower cranes manufactured after July 7, 2011, shall have a hook radius indicator readable from the operator's station.</u></p>	<p>Alternatives not permitted. Effective date brought forward from CSO Section 1619.1(e)(5)(I).</p>

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<p>measuring the hook radii or boom angle with a measuring device.</p>		
<p>(ii) Trolley travel deceleration device. The trolley speed must be automatically reduced prior to the trolley reaching the end limit in both directions. Temporary alternative measure: The employer must post a notice in the cab of the crane notifying the operator that the trolley travel deceleration device is malfunctioning and instructing the operator to take special care to reduce the trolley speed when approaching the trolley end limits.</p>	<p><u>§4968(s)(1) Trolley travel deceleration device. The trolley speed shall be automatically reduced prior to the trolley reaching the end limit in both directions to prevent trolley contact with end stops.</u></p>	<p>Safety device – no alternatives permitted.</p>
<p>(iii) Boom hoist deceleration device. The boom speed must be automatically reduced prior to the boom reaching the minimum or maximum radius limit. Temporary alternative measure: The employer must post a notice in the cab of the crane notifying the operator that the boom hoist deceleration device is malfunctioning and instructing the operator to take special care to reduce the boom speed when approaching the minimum or maximum radius limits.</p>	<p><u>§4968(s)(2) Boom hoist deceleration device. The boom speed shall be automatically reduced prior to the boom reaching the minimum or maximum radius limit.</u></p>	<p>Safety device – no alternatives permitted.</p>
<p>(iv) Load hoist deceleration device. The load speed must be automatically reduced prior to the hoist reaching the upper limit. Temporary alternative measure: The employer must post a notice in the cab of the crane notifying the operator that the load hoist deceleration device is malfunctioning and instructing the operator to take special care to</p>	<p><u>§4968(s)(3) Load hoist deceleration device. The load speed shall be automatically reduced prior to the hoist reaching the upper limit.</u></p>	<p>Safety device – no alternatives permitted.</p>

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<p>reduce the load speed when approaching the upper limits.</p>		
<p>(v) Wind speed indicator. A device must be provided to display the wind speed and must be mounted above the upper rotating structure on tower cranes. On self erecting cranes, it must be mounted at or above the jib level. Temporary alternative measures: Use of wind speed information from a properly functioning indicating device on another tower crane on the same site, or a qualified person estimates the wind speed.</p>	<p><u>§4968.2(e)(2) Wind speed indicator. A device shall be provided to display the wind speed and shall be mounted above the upper rotating structure on tower cranes. On self-erecting cranes, it shall be mounted at or above the jib level.</u> <u>Temporary alternative measures: Use of wind speed information from a properly functioning indicating device on another tower crane on the same site, or a qualified person estimates the wind speed.</u></p>	
<p>(vi) Load indicating device. Cranes manufactured after November 8, 2011 must have a device that displays the magnitude of the load on the hook. Displays that are part of load moment limiting devices that display the load on the hook meet this requirement. Temporary alternative measures: The weight of the load must be determined from a source recognized by the industry (such as the load’s manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. This information must be provided to the operator prior to the lift.</p>	<p>§4968. All tower cranes shall have the following safety devices: (a) Visual warning devices: (1) A warning light which shall be activated at a percentage of the rated load, not to exceed 95 percent of the rated load, or (2) Electronic instrumentation provided by the certified agent that gives a continuous direct reading of the load weight and the trolley radius.</p>	<p>CA requirement for display pre-dates the federal requirement.</p>
<p>(f) Inspections. (1) Section 1926.1412 (Inspections) applies to tower cranes, except that the term “assembly” is replaced by “erection.” Section 1926.1413</p>	<p><u>§4965.1. Inspections.</u> <u>(a) Article 100 (Inspection and Maintenance)</u> <u>applies to tower cranes, except that the term “assembly” is replaced by “erection.” Section</u></p>	

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<p>(Wire rope—inspection) applies to tower cranes.</p>	<p><u>5036 (Inspection - Wire Rope) applies to tower cranes.</u></p>	
<p>(2) Pre-erection inspection. Before each crane component is erected, it must be inspected by a qualified person for damage or excessive wear. (i) The qualified person must pay particular attention to components that will be difficult to inspect thoroughly during shift inspections. (ii) If the qualified person determines that a component is damaged or worn to the extent that it would create a safety hazard if used on the crane, that component must not be erected on the crane unless it is repaired and, upon reinspection by the qualified person, found to no longer create a safety hazard. (iii) If the qualified person determines that, though not presently a safety hazard, the component needs to be monitored, the employer must ensure that the component is checked in the monthly inspections. Any such determination must be documented, and the documentation must be available to any individual who conducts a monthly inspection.</p>	<p><u>(b) Pre-erection inspection. Before each crane component is erected, it shall be inspected by a qualified person for damage or excessive wear.</u> <u>(1) The qualified person shall pay particular attention to components that will be difficult to inspect thoroughly during shift inspections.</u> <u>(2) If the qualified person determines that a component is damaged or worn to the extent that it would create a safety hazard if used on the crane, that component shall not be erected on the crane unless it is repaired and, upon reinspection by the qualified person, found to no longer create a safety hazard.</u> <u>(3) If the qualified person determines that, though not presently a safety hazard, the component needs to be monitored, the employer shall ensure that the component is checked in the periodic inspections. Any such determination shall be documented, and the documentation shall be available to any individual who conducts a periodic inspection.</u></p>	
<p>(3) Post-erection inspection. In addition to the requirements in § 1926.1412(c), the following requirements must be met: (i) A load test using certified weights, or scaled weights using a certified scale with a current certificate of calibration, must be conducted after each erection.</p>	<p><u>(c) Post-erection inspection. In addition to the requirements in Section 5031.1, the following requirements shall be met:</u> <u>(1) A load test using certified weights, or scaled weights using a certified scale with a current certificate of calibration, shall be conducted after each erection.</u></p>	
<p>(ii) The load test must be conducted in accordance with the manufacturer's instructions</p>	<p><u>(2) The load test shall be conducted in accordance with Sections 344.81, 5022 and the</u></p>	<p>Added reference to GISO Section 5022 (which covers proof load testing in depth) to fed</p>

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<p>when available. Where these instructions are unavailable, the test must be conducted in accordance with written load test procedures developed by a registered professional engineer familiar with the type of equipment involved.</p>	<p><u>manufacturer's instructions.</u></p>	<p>verbiage.</p>
<p>(4) Monthly. The following additional items must be included: (i) Tower (mast) bolts and other structural bolts (for loose or dislodged condition) from the base of the tower crane up or, if the crane is tied to or braced by the structure, those above the upper-most brace support. (ii) The upper-most tie-in, braces, floor supports and floor wedges where the tower crane is supported by the structure, for loose or dislodged components.</p>	<p><u>(d) Periodic inspection. The following additional items shall be included:</u> <u>(1) Tower (mast) bolts and other structural bolts (for loose or dislodged condition) from the base of the tower crane up or, if the crane is tied to or braced by the structure, those above the upper-most brace support.</u> <u>(2) The upper-most tie-in, braces, floor supports and floor wedges where the tower crane is supported by the structure, for loose or dislodged components.</u></p>	
<p>(5) Annual. In addition to the items that must be inspected under § 1926.1412(f), all turntable and tower bolts must be inspected for proper condition and torque.</p>	<p><u>(e) Annual inspection. In addition to the items that shall be inspected under Sections 5022(d), 5031(d), and 5031.1, all turntable and tower bolts shall be inspected for proper condition and torque.</u></p>	
<p>§ 1926.1436 Derricks.</p>	<p>Article 95. Derricks</p>	
<p>(a) This section contains supplemental requirements for derricks, whether temporarily or permanently mounted; all sections of this subpart apply to derricks unless specified otherwise.</p>		<p>Not necessary to copy fed prefatory verbiage.</p>
<p>A derrick is powered equipment consisting of a mast or equivalent member that is held at or near the end by guys or braces, with or without</p>	<p>§4885. Definitions. Derrick. An apparatus consisting of a mast or equivalent member held at the top by guys or</p>	

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<p>a boom, and its hoisting mechanism. The mast/equivalent member and/or the load is moved by the hoisting mechanism (typically basemounted) and operating ropes.</p>	<p>braces, with or without a boom, for use with a hoisting mechanism and operating rope, for lifting or lowering a load and moving it horizontally.</p>	
<p>Derricks include: A-frame, basket, breast, Chicago boom, gin pole (except gin poles used for erection of communication towers), guy, shearleg, stiffleg, and variations of such equipment.</p>		<p>These types of cranes are defined and/or illustrated in GISO Section 4885, including Plate II.</p>
<p>(b) Operation—procedures. (1) Section 1926.1417 (Operation) applies except for § 1926.1417(c) (Accessibility of procedures).</p>	<p><u>§4959. Operation – Procedures.</u> <u>(a) Section 5008.1 (Operation) applies except for Section 5008.1(b) (Accessibility of procedures).</u></p>	
	<p>§4961. Rated Load Marking. (a) For permanently installed derricks with fixed lengths of boom, guy and mast, a substantial durable and clearly legible rating chart shall be provided with each derrick and securely affixed where it is visible to personnel responsible for the safe operation of the equipment.</p>	
<p>(2) Load chart contents. Load charts must contain at least the following information: (i) Rated capacity at corresponding ranges of boom angle or operating radii. (ii) Specific lengths of components to which the rated capacities apply. (iii) Required parts for hoist reeving. (iv) Size and construction of rope must be included on the load chart or in the operating</p>	<p>The chart shall include but not necessarily be limited to the following data: (1) Certified agent's approved load ratings at corresponding ranges of boom angle or operating radii. (2) Specific length of components on which the load ratings are based. (3) Required parts for hoisting reeving. Size and construction of the rope may <u>shall</u> be shown either on the rating chart or in the</p>	

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manual.	operating manual.	
(3) Load chart location. (i) Permanent installations. For permanently installed derricks with fixed lengths of boom, guy, and mast, a load chart must be posted where it is visible to personnel responsible for the operation of the equipment.	§4961(a) For permanently installed derricks with fixed lengths of boom, guy and mast, a substantial durable and clearly legible rating chart shall be provided with each derrick and securely affixed where it is visible to personnel responsible for the safe operation of the equipment.	
(ii) Non-permanent installations. For derricks that are not permanently installed, the load chart must be readily available at the job site to personnel responsible for the operation of the equipment.	§4961(b) For non-permanent installations, capacity charts shall be prepared for the particular installation based on information provided by the certified agent. The capacity charts shall be located at the derrick.	
(c) Construction. (1) General requirements. (i) Derricks must be constructed to meet all stresses imposed on members and components when installed and operated in accordance with the manufacturer's/builder's procedures and within its rated capacity. (ii) Welding of load sustaining members must conform to recommended practices in ANSI/AWS D14.3-94 (incorporated by reference, see § 1926.6) or AWS D1.1/D1.1M:2002 (incorporated by reference, see § 1926.6).	§4884. <u>Standards Incorporated by Reference.</u> (a) <u>Cranes and derricks shall be designed, constructed, and installed in accordance with the following standards which are hereby incorporated by reference.</u> *** (d) <u>Cranes and derricks manufactured after July 7, 2011, until [OAL to insert effective date here] shall be designed, constructed and installed in accordance with the following applicable American National Standards Institute (ANSI)/American Society of Mechanical Engineers (ASME) standards which are hereby incorporated by reference:</u> *** <u>B30.6-1995, Derricks</u>	ASME B30.6, which is incorporated by Section 4884, prescribes all these requirements.
	§4960. Construction. (a) <u>Guy derricks.</u>	Similar B30.6, sec. 6-1.2.2 Certified agent = manufacturer = RPE.

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<p>(2) Guy derricks. (i) The minimum number of guys must be 6, with equal spacing, except where a qualified person or derrick manufacturer approves variations from these requirements and revises the rated capacity to compensate for such variations.</p>	<p><u>(1) The minimum number of guys shall be 6, with equal spacing, except where a certified agent or derrick manufacturer approves variations from these requirements and revises the rated capacity to compensate for such variations.</u></p>	
<p>(ii) Guy derricks must not be used unless the employer has the following guy information from the manufacturer or a qualified person, when not available from the manufacturer: (A) The number of guys. (B) The spacing around the mast. (C) The size, grade, and construction of rope to be used for each guy.</p>	<p><u>(2) Guy derricks shall not be used unless the employer has the following guy information from the manufacturer or a certified agent, when not available from the manufacturer: (A) The number of guys. (B) The spacing around the mast. (C) The size, grade, and construction of rope to be used for each guy.</u></p>	
<p>(iii) For guy derricks manufactured after December 18, 1970, in addition to the information required in paragraph (c)(2)(ii) of this section, the employer must have the following guy information from the manufacturer or a qualified person, when not available from the manufacturer: (A) The amount of initial sag or tension. (B) The amount of tension in guy line rope at anchor.</p>	<p><u>(3) For guy derricks manufactured after December 18, 1970, in addition to the information required in subsection (a)(2), the employer shall have the following guy information from the manufacturer or a certified agent, when not available from the manufacturer: (A) The amount of initial sag or tension. (B) The amount of tension in guy line rope at anchor.</u></p>	
<p>(iv) The mast base must permit the mast to rotate freely with allowance for slight tilting of the mast caused by guy slack.</p>	<p><u>(4) The mast base shall permit the mast to rotate freely with allowance for slight tilting of the mast caused by guy slack.</u></p>	
<p>(v) The mast cap must: (A) Permit the mast to rotate freely. (B) Withstand tilting and cramping caused by</p>	<p><u>(5) The mast cap shall: (A) Permit the mast to rotate freely. (B) Withstand tilting and cramping caused by</u></p>	

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<p>the guy loads. (C) Be secured to the mast to prevent disengagement during erection. (D) Be provided with means for attaching guy ropes.</p>	<p><u>the guy loads.</u> <u>(C) Be secured to the mast to prevent disengagement during erection.</u> <u>(D) Be provided with means for attaching guy ropes.</u></p>	
<p>(3) Stiffleg derricks. (i) The mast must be supported in the vertical position by at least two stifflegs; one end of each must be connected to the top of the mast and the other end securely anchored. (ii) The stifflegs must be capable of withstanding the loads imposed at any point of operation within the load chart range. (iii) The mast base must: (A) Permit the mast to rotate freely (when necessary). (B) Permit deflection of the mast without binding. (iv) The mast must be prevented from lifting out of its socket when the mast is in tension. (v) The stiffleg connecting member at the top of the mast must: (A) Permit the mast to rotate freely (when necessary). (B) Withstand the loads imposed by the action of the stifflegs. (C) Be secured so as to oppose separating forces.</p>	<p><u>§4960(b) Stiffleg derricks.</u> <u>(1) The mast shall be supported in the vertical position by at least two stifflegs; one end of each shall be connected to the top of the mast and the other end securely anchored.</u> <u>(2) The stifflegs shall be capable of withstanding the loads imposed at any point of operation within the load chart range.</u> <u>(3) The mast base shall:</u> <u>(A) Permit the mast to rotate freely (when necessary).</u> <u>(B) Permit deflection of the mast without binding.</u> <u>(4) The mast shall be prevented from lifting out of its socket when the mast is in tension.</u> <u>(5) The stiffleg connecting member at the top of the mast shall:</u> <u>(A) Permit the mast to rotate freely (when necessary).</u> <u>(B) Withstand the loads imposed by the action of the stifflegs.</u> <u>(C) Be secured so as to oppose separating forces.</u></p>	
<p>(4) Gin pole derricks. (i) Guy lines must be sized and spaced so as to make the gin pole stable in both boomed and vertical positions. Exception: Where the size and/or spacing of</p>	<p><u>§4960(c) Gin pole derricks.</u> <u>(1) Guy lines shall be sized and spaced so as to make the gin pole stable in both boomed and vertical positions.</u> <u>EXCEPTION: Where the size and/or spacing of</u></p>	

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<p>guy lines do not result in the gin pole being stable in both boomed and vertical positions, the employer must ensure that the derrick is not used in an unstable position.</p> <p>(ii) The base of the gin pole must permit movement of the pole (when necessary).</p> <p>(iii) The gin pole must be anchored at the base against horizontal forces (when such forces are present).</p>	<p><u>guy lines do not result in the gin pole being stable in both boomed and vertical positions, the employer shall ensure that the derrick is not used in an unstable position.</u></p> <p><u>(2) The base of the gin pole shall permit movement of the pole (when necessary).</u></p> <p><u>(3) The gin pole shall be anchored at the base against horizontal forces (when such forces are present).</u></p>	
<p>(5) Chicago boom derricks. The fittings for stepping the boom and for attaching the topping lift must be arranged to:</p> <p>(i) Permit the derrick to swing at all permitted operating radii and mounting heights between fittings.</p> <p>(ii) Accommodate attachment to the upright member of the host structure.</p> <p>(iii) Withstand the forces applied when configured and operated in accordance with the manufacturer's/builder's procedures and within its rated capacity.</p> <p>(iv) Prevent the boom or topping lift from lifting out under tensile forces.</p>	<p><u>§4960(d) Chicago boom derricks. The fittings for stepping the boom and for attaching the topping lift shall be arranged to:</u></p> <p><u>(1) Permit the derrick to swing at all permitted operating radii and mounting heights between fittings.</u></p> <p><u>(2) Accommodate attachment to the upright member of the host structure.</u></p> <p><u>(3) Withstand the forces applied when configured and operated in accordance with the manufacturer's/builder's procedures and within its rated capacity.</u></p> <p><u>(4) Prevent the boom or topping lift from lifting out under tensile forces.</u></p>	
<p>(d) Anchoring and guying.</p> <p>(1) Load anchoring data developed by the manufacturer or a qualified person must be used.</p>	<p><u>§4960(e) Anchoring and guying.</u></p> <p><u>(1) General requirements.</u></p> <p><u>(A) (a) Derricks shall be guyed and anchored so as to prevent tipping or collapsing.</u></p> <p><u>(B) (b) Reinforcing steel shall not be used for guy line anchors.</u></p> <p><u>(C) Load anchoring data developed by the manufacturer or a certified agent shall be used.</u></p>	<p>Certified agent = manufacturer = RPE.</p>
<p>(2) Guy derricks.</p>	<p><u>(2) Guy derricks.</u></p>	

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<p>(i) The mast base must be anchored. (ii) The guys must be secured to the ground or other firm anchorage. (iii) The anchorage and guying must be designed to withstand maximum horizontal and vertical forces encountered when operating within rated capacity with the particular guy slope and spacing specified for the application</p>	<p><u>(A) The mast base shall be anchored.</u> <u>(B) The guys shall be secured to the ground or other firm anchorage.</u> <u>(C) The anchorage and guying shall be designed to withstand maximum horizontal and vertical forces encountered when operating within rated capacity with the particular guy slope and spacing specified for the application.</u></p>	
<p>(3) Stiffleg derricks. (i) The mast base and stifflegs must be anchored. (ii) The mast base and stifflegs must be designed to withstand maximum horizontal and vertical forces encountered when operating within rated capacity with the particular stiffleg spacing and slope specified for the application</p>	<p><u>(3) Stiffleg derricks.</u> <u>(A) The mast base and stifflegs shall be anchored.</u> <u>(B) The mast base and stifflegs shall be designed to withstand maximum horizontal and vertical forces encountered when operating within rated capacity with the particular stiffleg spacing and slope specified for the application.</u></p>	
<p>(e) Swingers and hoists. (1) The boom, swinger mechanisms and hoists must be suitable for the derrick work intended and must be anchored to prevent displacement from the imposed loads. (2) Hoists. (i) Base mounted drum hoists must meet the requirements in the following sections of ASME B30.7–2001 (incorporated by reference, see § 1926.6): (A) Sections 7–1.1 (“Load ratings and markings”). (B) Section 7–1.2 (“Construction”), except: 7–1.2.13 (“Operator’s cab”); 7–1.2.15 (“Fire extinguishers”). (C) Section 7–1.3 (“Installation”). (D) Applicable terms in section 7–0.2</p>	<p><u>§4960(f) Swingers and hoists.</u> <u>(1) The boom, swinger mechanisms and hoists shall be suitable for the derrick work intended and shall be anchored to prevent displacement from the imposed loads.</u> <u>(2) Hoists.</u> <u>(A) Base mounted drum hoists shall meet the requirements of ASME B30.7–2011 which is incorporated by reference.</u></p>	<p>Since B30.7 is incorporated by reference, there is no need to specify subsections. To do so would raise questions about what other parts may or may not apply. B30.7 has been adopted in its entirety. CA will adopt B30.7-2011 with the adoption of this standard.</p>

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<p>(“Definitions”).</p>										
<p>(ii) Load tests for new hoists.</p>	<p><u>§4960(f)(2)(B) Load tests for new, repaired and modified hoists. See Article 99 for testing requirements.</u></p>									
<p>(ii) Load tests for new hoists. The employer must ensure that new hoists are load tested to a minimum of 110% of rated capacity, but not more than 125% of rated capacity, unless otherwise recommended by the manufacturer. This requirement is met where the manufacturer has conducted this testing.</p>	<p>Article 99, §5023. Proof Load Test and Examination of Derricks and Their Accessory Gear.</p> <p>(a) Proof load tests of derricks shall be carried out at the same intervals as specified in Section 5022(a) for cranes.</p> <p>(b) Proof load tests and safe working load ratings shall be based on the designed load ratings at the ranges of boom angle or operating radii. Proof loads shall exceed the safe working load (SWL) as follows:</p> <table border="1"> <thead> <tr> <th>SWL</th> <th>Proof Load</th> </tr> </thead> <tbody> <tr> <td>Up to 20 tons</td> <td>25 percent in excess</td> </tr> <tr> <td>20-50 tons</td> <td>5 tons in excess</td> </tr> <tr> <td>Over 50 tons</td> <td>10 percent in excess</td> </tr> </tbody> </table>	SWL	Proof Load	Up to 20 tons	25 percent in excess	20-50 tons	5 tons in excess	Over 50 tons	10 percent in excess	
SWL	Proof Load									
Up to 20 tons	25 percent in excess									
20-50 tons	5 tons in excess									
Over 50 tons	10 percent in excess									
<p>(iii) Repaired or modified hoists. Hoists that have had repairs, modifications or additions affecting their capacity or safe operation must be evaluated by a qualified person to determine if a load test is necessary. If it is, load testing must be conducted in accordance with paragraphs (e)(2)(ii) and (iv) of this section.</p>	<p>Article 99, §5022. Proof Load Test and Examination of Cranes and Their Accessory Gear.</p> <p>(a) Proof load tests of cranes shall be carried out at the following intervals: ***</p> <p>(3) In the case of major modifications or repairs to important structural components, before they are returned to service.</p>									
<p>(iv) Load test procedure. Load tests required by paragraphs (e)(2)(ii) or (e)(2)(iii) of this section must be conducted as follows: (A) The test load must be hoisted a vertical</p>	<p><u>4960(f)(2)(C) Load test procedure. Load tests required by subsection (f)(2)(B) shall include the following:</u> <u>1. The test load shall be hoisted a vertical</u></p>	<p>Testing and certification is required by Section 4885, Plate V and Sections 5020 and 5025.</p>								

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<p>distance to assure that the load is supported by the hoist and held by the hoist brake(s). (B) The test load must be lowered, stopped and held with the brake(s).</p>	<p><u>distance to assure that the load is supported by the hoist and held by the hoist brake(s).</u> <u>2. The test load shall be lowered, stopped and held with the brake(s).</u></p>	
<p>(C) The hoist must not be used unless a competent person determines that the test has been passed.</p>	<p>§5020. Operational Testing. (a) In addition to prototype tests by the manufacturer, and prior to initial use, each new crane or derrick, or any crane or derrick which is structurally altered due to repair, shall be inspected and tested by the certified agent to insure compliance with the provisions of these orders, including the following functions where applicable: (1) Hoisting and lowering boom and load (2) Swing mechanism (3) Travel mechanisms, trolley, bridge, carrier (4) Limit switches, locking, and other safety devices ***</p>	
<p>(f) Operational aids. (1) Section 1926.1416 (Operational aids) applies, except for § 1926.1416(d)(1) (Boom hoist limiting device), § 1926.1416(e)(1) (Boom angle or radius indicator), and § 1926.1416(e)(4) (Load weighing and similar devices).</p>	<p><u>§4960.1. Operational Aids (Supplemental requirements for derricks in construction).</u> <u>(a) Section 5018, Operational Aids, applies, except as supplemented below:</u></p>	<p>The listed exceptions to 1926.1416 correspond to Section 1436(f)(2). Derricks are exempted from 1926.1416(e)(4).</p>
<p>(2) Boom angle aid. A boom angle indicator is not required but if the derrick is not equipped with a functioning one, the employer must ensure that either: (i) The boom hoist cable must be marked with caution and stop marks. The stop marks must</p>	<p><u>(b) Boom angle aid. A boom angle indicator is not required but if the derrick is not equipped with a functioning one, the employer shall ensure that either:</u> <u>(1) The boom hoist cable shall be marked with caution and stop marks. The stop marks shall</u></p>	

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<p>correspond to maximum and minimum allowable boom angles. The caution and stop marks must be in view of the operator, or a spotter who is in direct communication with the operator; or</p> <p>(ii) An electronic or other device that signals the operator in time to prevent the boom from moving past its maximum and minimum angles, or automatically prevents such movement, is used.</p>	<p><u>correspond to maximum and minimum allowable boom angles. The caution and stop marks shall be in view of the operator, or a spotter who is in direct communication with the operator; or</u></p> <p><u>(2) An electronic or other device that signals the operator in time to prevent the boom from moving past its maximum and minimum angles, or automatically prevents such movement, is used.</u></p>	
<p>(3) Load weight/capacity devices.</p> <p>(i) Derricks manufactured more than one year after November 8, 2010 with a maximum rated capacity over 6,000 pounds must have at least one of the following: load weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter.</p> <p>Temporary alternative measures: The weight of the load must be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. This information must be provided to the operator prior to the lift. See § 1926.1417(j) for additional requirements.</p> <p>(ii) A load weight/capacity device that is not working properly must be repaired no later than 30 days after the deficiency occurs.</p> <p>Exception: If the employer documents that it has ordered the necessary parts within 7 days of the occurrence of the deficiency, and the part is not received in time to complete the repair in 30</p>	<p><u>§4960.1(c) Load weight/capacity devices.</u></p> <p><u>(1) Derricks manufactured more than one year after July 7, 2011, with a maximum rated capacity over 6,000 pounds shall have at least one of the following: load weighing device, load moment indicator, rated capacity indicator, or rated capacity limiter.</u></p> <p><u>Temporary alternative measures: The weight of the load shall be determined from a source recognized by the industry (such as the load's manufacturer), or by a calculation method recognized by the industry (such as calculating a steel beam from measured dimensions and a known per foot weight), or by other equally reliable means. This information shall be provided to the operator prior to the lift. See Section 5008.1(g) for additional requirements.</u></p> <p><u>(2) A load weight/capacity device that is not working properly shall be repaired no later than 7 calendar days after the deficiency occurs.</u></p>	<p>Fed verbiage amended with state effective date from CSO Section 1619.2(f).</p> <p>Load weighing devices are considered safety devices in CA and repair time is limited to 7 days.</p>

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<p>days, the repair must be completed within 7 days of receipt of the parts.</p>		
<p>(g) Post-assembly approval and testing—new or reinstalled derricks. (1) Anchorages. (i) Anchorages, including the structure to which the derrick is attached (if applicable), must be approved by a qualified person.</p>	<p><u>§4960.2. Post-Assembly Approval and Testing—New or Reinstalled Derricks.</u> <u>(a) Anchorages. Anchorages, including the structure to which the derrick is attached (if applicable), shall be approved by a certified agent.</u></p>	<p>Certified agent required per GISO Section 5020.</p>
<p>(ii) If using a rock or hairpin anchorage, the qualified person must determine if any special testing of the anchorage is needed. If so, it must be tested accordingly.</p>		<p>T8 Section 4960(b) prohibits the use of rebar/hairpin anchorage.</p>
<p>(2) Functional test. Prior to initial use, new or reinstalled derricks must be tested by a competent person with no hook load to verify proper operation. This test must include: (i) Lifting and lowering the hook(s) through the full range of hook travel. (ii) Raising and lowering the boom through the full range of boom travel. (iii) Swinging in each direction through the full range of swing. (iv) Actuating the anti two-block and boom hoist limit devices (if provided). (v) Actuating locking, limiting and indicating devices (if provided).</p>	<p><u>(b) Functional test. Prior to initial use, new or reinstalled derricks shall be tested in accordance General Industry Safety Orders, Section 5020.</u></p>	<p>§5020. Operational Testing. (a) In addition to prototype tests by the manufacturer, and prior to initial use, each new crane or derrick, or any crane or derrick which is structurally altered due to repair, shall be inspected and tested by <u>a</u> the certified agent to insure compliance with the provisions of these orders, including the following functions where applicable: (1) Hoisting and lowering boom and load (2) Swing mechanism (3) Travel mechanisms, trolley, bridge, carrier (4) Limit switches, locking, and other safety devices</p>
<p>(3) Load test. Prior to initial use, new or reinstalled derricks must be load tested by a competent person. The test load must meet the following requirements:</p>	<p><u>(c) Load test. Prior to initial use, new or reinstalled derricks shall be load tested by a certifying agency. The testing shall be done in accordance with the provisions of General</u></p>	<p>Federal subsection (g)(3) amended to require compliance with GISO Section 5023 which is more protective. [Copied from Section 1619.2(g)(3)]</p>

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<p>(i) Test loads must be at least 100% and no more than 110% of the rated capacity, unless otherwise recommended by the manufacturer or qualified person, but in no event must the test load be less than the maximum anticipated load.</p>	<p><u>Industry Safety Orders, Section 5023.</u></p>	
<p>(ii) The test must consist of: (A) Hoisting the test load a few inches and holding to verify that the load is supported by the derrick and held by the hoist brake(s). (B) Swinging the derrick, if applicable, the full range of its swing, at the maximum allowable working radius for the test load. (C) Booming the derrick up and down within the allowable working radius for the test load. (D) Lowering, stopping and holding the load with the brake(s).</p>	<p><u>(1) The test shall consist of:</u> <u>(A) Hoisting the test load a few inches and holding to verify that the load is supported by the derrick and held by the hoist brake(s).</u> <u>(B) Swinging the derrick, if applicable, the full range of its swing, at the maximum allowable working radius for the test load.</u> <u>(C) Booming the derrick up and down within the allowable working radius for the test load.</u> <u>(D) Lowering, stopping and holding the load with the brake(s).</u></p>	<p>Copied from Section 1619.2(g)(3).</p>
<p>(iii) The derrick must not be used unless the competent person determines that the test has been passed.</p>	<p><u>(2) The derrick shall not be used unless the certifying agency determines that the test has been passed.</u></p>	<p>Copied from Section 1619.2(g)(3).</p>
<p>(4) Documentation. Tests conducted under this paragraph must be documented. The document must contain the date, test results and the name of the tester. The document must be retained until the derrick is re-tested or dismantled, whichever occurs first. All such documents must be available, during the applicable document retention period, to all persons who conduct inspections in accordance with § 1926.1412.</p>	<p><u>(d) Documentation. Tests conducted under this subsection shall be documented. The document shall contain the date, test results and the name of the tester. The document shall be retained until the derrick is re-tested or dismantled, whichever occurs first. All such documents shall be available, during the applicable document retention period, to all persons who conduct inspections in accordance with Article 100.</u></p>	
<p>(h) Load testing repaired or modified derricks. Derricks that have had repairs, modifications or</p>	<p>§5020. Operational Testing. (a) In addition to prototype tests by the</p>	<p>Equivalence provided by Sections 5020, 5022 and 5023 as shown in center column.</p>

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<p>additions affecting the derrick's capacity or safe operation must be evaluated by a qualified person to determine if a load test is necessary. If it is, load testing must be conducted and documented in accordance with paragraph (g) of this section.</p> <p>(i) [Reserved.]</p>	<p>manufacturer, and prior to initial use, each new crane or derrick, or any crane or derrick which is structurally altered due to repair, shall be inspected and tested by a the certified agent to insure compliance with the provisions of these orders, including the following functions...</p> <p>***</p> <p>§5022. Proof Load Test and Examination of Cranes and Their Accessory Gear.</p> <p>(a) Proof load tests of cranes shall be carried out at the following intervals:</p> <p>***</p> <p>(3) In the case of major modifications or repairs to important structural components, before they are returned to service.</p> <p>***</p> <p>§5023. Proof Load Test and Examination of Derricks and Their Accessory Gear.</p> <p>(a) Proof load tests of derricks shall be carried out at the same intervals as specified in Section 5022(a) for cranes.</p> <p>***</p>	
<p>(j) Power failure procedures. If power fails during operations, the derrick operator must safely stop operations. This must include:</p> <p>(1) Setting all brakes or locking devices.</p> <p>(2) Moving all clutch and other power controls to the off position.</p>	<p>§5008. Operating Practices.</p> <p>***</p> <p>(g) If power fails during operation, the operator shall be required to:</p> <p>(1) Set all brakes and locking devices;</p> <p>(2) Move all clutch or other power controls to the "off" position;</p> <p>(3) If practical, the suspended load shall be landed under brake control.</p>	
<p>(k) Use of winch heads.</p> <p>(1) Ropes must not be handled on a winch head</p>	<p>§4962.1. Use of Winch Heads.</p> <p>(a) Ropes shall not be handled on a winch head</p>	

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<p>without the knowledge of the operator. (2) While a winch head is being used, the operator must be within reach of the power unit control lever. (1) [Reserved.]</p>	<p><u>without the knowledge of the operator.</u> <u>(b) While a winch head is being used, the operator shall be within reach of the power unit control lever.</u></p>	
<p>(m) Securing the boom. (1) When the boom is being held in a fixed position, dogs, pawls, or other positive holding mechanisms on the boom hoist must be engaged. (2) When taken out of service for 30 days or more, the boom must be secured by one of the following methods: (i) Laid down. (ii) Secured to a stationary member, as nearly under the head as possible, by attachment of a sling to the load block. (iii) For guy derricks, lifted to a vertical position and secured to the mast. (iv) For stiffleg derricks, secured against the stiffleg.</p>	<p><u>§4960.3 Securing the Boom.</u> <u>(a) When the boom is being held in a fixed position, dogs, pawls, or other positive holding mechanism on the hoist shall be engaged.</u> <u>(b) When taken out of service for 30 days or more, the derrick boom shall be secured by one of the following methods:</u> <u>(1) Be laid down;</u> <u>(2) Be secured to a stationary member, as nearly under the head as possible, by attachment of a sling to the load block;</u> <u>(3) For guy derricks, be hoisted to a vertical position and secured to the mast;</u> <u>(4) For stiffleg derricks, secured against the stiffleg.</u></p>	<p>Some language relocated from Section 4960(c) and modified with federal verbiage. Fed “30 days” added to quantify “when not in use.”</p>
<p>(n) The process of jumping the derrick must be supervised by the A/D director.</p>	<p><u>§5010.1. Assembly/Disassembly - General Requirements (Applies to All Assembly and Disassembly Operations).</u> <u>(a) Supervision—competent-qualified person.</u> *** <u>(3) The process of jumping the crane or derrick shall be supervised by the A/D director.</u></p>	<p>Section 5010.1 applies to cranes and derricks.</p>
<p>(o) Derrick operations must be supervised by a competent person.</p>	<p><u>§4959. Operation – Procedures.</u> *** <u>(b) Derrick operations shall be supervised by a qualified person.</u></p>	

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<p>(p) Inspections. In addition to the requirements in § 1926.1412, the following additional items must be included in the inspections:</p> <p>(1) Daily: Guys for proper tension. (2) Annual. (i) Gudgeon pin for cracks, wear, and distortion. (ii) Foundation supports for continued ability to sustain the imposed loads.</p>	<p><u>§4960.4. Inspections. In addition to the requirements in Article 100, the following additional items shall be included in the inspections:</u></p> <p><u>(a) Daily: Guys for proper tension.</u> <u>(b) Annual.</u> <u>(1) Gudgeon pin for cracks, wear, and distortion.</u> <u>(2) Foundation supports for continued ability to sustain the imposed loads.</u></p>	
<p>(q) Qualification and Training. The employer must train each operator of a derrick on the safe operation of equipment the individual will operate.</p> <p>Section 1926.1427 of this subpart (Operator qualification and certification) does not apply.</p>	<p><u>§5006. Crane and Hoisting Equipment Operators - Qualifications.</u></p> <p><u>(a) Only employees authorized by the employer and trained in the safe operation of cranes or hoisting apparatus shall be permitted to operate such equipment.</u></p> <p>*** EXCEPTION: Mobile and tower cranes regulated by Section 5006.1</p>	
<p>§ 1926.1437 Floating cranes/derricks and land cranes/derricks on barges.</p>	<p>Article 97.1. Floating Cranes/Derricks and Land Cranes/Derricks on Barges</p>	
<p>(a) This section contains supplemental requirements for floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation (i.e., vessel/flotation device).</p> <p>The sections of this subpart apply to floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation, unless specified otherwise. The requirements of this section do not apply when using jacked barges when the jacks are</p>	<p><u>§4988.1. Scope.</u></p> <p><u>(a) The sections of this Article apply to floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation, unless specified otherwise.</u></p> <p><u>EXCEPTION: The requirements of this Article do not apply when using jacked barges when the jacks are deployed to the river, lake, or sea bed and the barge is fully supported by the jacks.</u></p>	

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<p>deployed to the river, lake, or sea bed and the barge is fully supported by the jacks.</p>		
<p>(b) General requirements. The requirements in paragraphs (c) through (k) of this section apply to both floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation.</p>	<p><u>(b) Sections 4988.2 through 4988.6 apply to both floating cranes/derricks and land cranes/derricks on barges, pontoons, vessels or other means of flotation.</u></p>	
<p>(c) Work area control. (1) The requirements of § 1926.1424 (Work area control) apply, except for § 1926.1424(a)(2)(ii).</p>	<p><u>§4988.2. Work Area Control.</u> <u>(a) The requirements of Section 4993.1 (Work Area Control) apply.</u></p>	<p>1926.1424(a)(2)(ii) corresponds to T8 Section 4993.1(a)(2)(B). California has an exception to Section 4993.1(a)(2)(B) which addresses work over water and provides equal or superior safety to the federal exception.</p>
<p>(2) The employer must either: (i) Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas; or (ii) Clearly mark the hazard areas by a combination of warning signs (such as, “Danger—Swing/Crush Zone”) and high visibility markings on the equipment that identify the hazard areas. In addition, the employer must train each employee to understand what these markings signify.</p>	<p><u>(b) The employer shall either:</u> <u>(1) Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas; or</u> <u>(2) Clearly mark the hazard areas by a combination of warning signs (such as, “Danger—Swing/Crush Zone”) and high visibility markings on the equipment that identify the hazard areas. In addition, the employer shall train each employee to understand what these markings signify.</u></p>	
<p>(d) Keeping clear of the load. Section 1926.1425 does not apply.</p>		<p>California requirements for protection from overhead loads are found in Section 5002 (state counterpart for 1926.1425)</p>
<p>(e) Additional safety devices. In addition to the safety devices listed in § 1926.1415, the following safety devices are required: (1) Barge, pontoon, vessel or other means of</p>	<p><u>§4988.3. Additional Safety Devices.</u> <u>In addition to the safety devices listed in Section 5017, the following safety devices are required:</u></p>	

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<p>flotation list and trim device. The safety device must be located in the cab or, when there is no cab, at the operator's station.</p> <p>(2) Positive equipment house lock.</p> <p>(3) Wind speed and direction indicator. A competent person must determine if wind is a factor that needs to be considered; if wind needs to be considered, a wind speed and direction indicator must be used.</p>	<p><u>(a) Barge, pontoon, vessel or other means of flotation list and trim device. The safety device shall be located in the cab or, when there is no cab, at the operator's station.</u></p> <p><u>(b) Positive equipment house lock.</u></p> <p><u>(c) Wind speed and direction indicator. A competent person shall determine if wind is a factor that needs to be considered; if wind needs to be considered, a wind speed and direction indicator shall be used.</u></p>	
<p>(f) Operational aids.</p> <p>(1) An anti two-block device is required only when hoisting personnel or hoisting over an occupied cofferdam or shaft.</p>	<p><u>§4988.3. EXCEPTION 2: An anti-two-block device [Section 5017(a)(8)] is required only when hoisting personnel or hoisting over an occupied cofferdam or shaft.</u></p>	
<p>(2) Section 1926.1416(e)(4) (Load weighing and similar devices) does not apply to dragline, clamshell (grapple), magnet, drop ball, container handling, concrete bucket, and pile driving work performed under this section.</p>	<p><u>§4988.3. EXCEPTION 1: The requirements of Section 5017(a)(11) do not apply to dragline, clamshell (grapple), magnet, drop ball, container handling, concrete bucket, and pile driving work performed under this Article.</u></p>	
<p>(g) Accessibility of procedures applicable to equipment operation. If the crane/derrick has a cab, the requirements of § 1926.1417(c) apply. If the crane/derrick does not have a cab, the employer must ensure that:</p> <p>(1) Rated capacities (load charts) are posted at the operator's station. If the operator's station is moveable (such as with pendant-controlled equipment), the load charts are posted on the equipment.</p> <p>(2) Procedures applicable to the operation of the equipment (other than load charts), recommended operating speeds, special hazard</p>	<p><u>§4988.4. Accessibility of Procedures Applicable to Equipment Operation.</u></p> <p><u>If the crane/derrick has a cab, the requirements of Section 5008.1(b) apply. If the crane/derrick does not have a cab, the employer shall ensure that:</u></p> <p><u>(a) Rated capacities (load charts) are posted at the operator's station. If the operator's station is moveable (such as with pendant-controlled equipment), the load charts shall be posted on the equipment.</u></p> <p><u>(b) Procedures applicable to the operation of the equipment (other than load charts),</u></p>	

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<p>warnings, instructions and operators manual, must be readily available on board the vessel/flotation device.</p>	<p><u>recommended operating speeds, special hazard warnings, instructions and operators manual, shall be readily available on board the vessel/flotation device.</u></p>	
<p>(h) Inspections. In addition to meeting the requirements of § 1926.1412 for inspecting the crane/derrick, the employer must inspect the barge, pontoons, vessel or other means of flotation used to support a floating crane/ derrick or land crane/derrick, and ensure that:</p>	<p><u>§4988.5. Inspections.</u> <u>In addition to meeting the requirements of Article 100 for inspecting the crane/derrick, the employer shall inspect the barge, pontoons, vessel or other means of flotation used to support a floating crane/derrick or land crane/derrick, and ensure that:</u></p>	
<p>(1) Shift. For each shift inspection, the means used to secure/attach the equipment to the vessel/flotation device is in proper condition, including wear, corrosion, loose or missing fasteners, defective welds, and (when applicable) insufficient tension.</p>	<p><u>(a) Shift. For each shift inspection, the means used to secure/attach the equipment to the vessel/flotation device is in proper condition, including wear, corrosion, loose or missing fasteners, defective welds, and (when applicable) insufficient tension.</u></p>	
<p>(2) Monthly. For each monthly inspection: (i) The means used to secure/attach the equipment to the vessel/flotation device is in proper condition, including inspection for wear, corrosion, and, when applicable, insufficient tension. (ii) The vessel/flotation device is not taking on water. (iii) The deckload is properly secured. (iv) The vessel/flotation device is watertight based on the condition of the chain lockers, storage, fuel compartments, and hatches. (v) The firefighting and lifesaving equipment is in place and functional.</p>	<p><u>(b) Periodic. For each periodic inspection:</u> <u>(1) The means used to secure/attach the equipment to the vessel/flotation device is in proper condition, including inspection for wear, corrosion, and, when applicable, insufficient tension.</u> <u>(2) The vessel/flotation device is not taking on water.</u> <u>(3) The deck load is properly secured.</u> <u>(4) The vessel/flotation device is watertight based on the condition of the chain lockers, storage, fuel compartments, and hatches.</u> <u>(5) The firefighting and lifesaving equipment is in place and functional.</u></p>	

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<p>(3) The shift and monthly inspections are conducted by a competent person, and:</p> <p>(i) If any deficiency is identified, an immediate determination is made by a qualified person whether the deficiency constitutes a hazard.</p> <p>(ii) If the deficiency is determined to constitute a hazard, the vessel/flotation device is removed from service until the deficiency has been corrected.</p>	<p><u>(c) The shift and periodic inspections shall be conducted by a qualified person, and:</u></p> <p><u>(1) If any deficiency is identified, an immediate determination is made by a qualified person whether the deficiency constitutes a hazard.</u></p> <p><u>(2) If the deficiency is determined to constitute a hazard, the vessel/flotation device shall be removed from service until the deficiency has been corrected.</u></p>	
<p>(4) Annual: external vessel/flotation device inspection. For each annual inspection:</p> <p>(i) The external portion of the barge, pontoons, vessel or other means of flotation used is inspected annually by a qualified person who has expertise with respect to vessels/flotation devices and that the inspection includes the following items:</p> <p>(A) The items identified in paragraphs (h)(1) (Shift) and (h)(2) (Monthly) of this section.</p> <p>(B) Cleats, bitts, chocks, fenders, capstans, ladders, and stanchions, for significant corrosion, wear, deterioration, or deformation that could impair the function of these items.</p> <p>(C) External evidence of leaks and structural damage; evidence of leaks and damage below the waterline may be determined through internal inspection of the vessel/flotation device.</p> <p>(D) Four-corner draft readings.</p> <p>(E) Firefighting equipment for serviceability.</p> <p>(ii) Rescue skiffs, lifelines, work vests, life preservers and ring buoys are inspected for proper condition.</p>	<p><u>(d) Annual. External vessel/flotation device inspection. For each annual inspection:</u></p> <p><u>(1) The external portion of the barge, pontoons, vessel or other means of flotation used shall be inspected annually by a qualified person who has expertise with respect to vessels/flotation devices and the inspection includes the following items:</u></p> <p><u>(A) The items identified in subsections (a) (Shift) and (b) (Periodic) of this section.</u></p> <p><u>(B) Cleats, bitts, chocks, fenders, capstans, ladders, and stanchions, for significant corrosion, wear, deterioration, or deformation that could impair the function of these items.</u></p> <p><u>(C) External evidence of leaks and structural damage; evidence of leaks and damage below the waterline may be determined through internal inspection of the vessel/flotation device.</u></p> <p><u>(D) Four-corner draft readings.</u></p> <p><u>(E) Firefighting equipment for serviceability.</u></p> <p><u>(2) Rescue skiffs, lifelines, work vests, life preservers and ring buoys are inspected for proper condition.</u></p>	

CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

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<p>(iii) If any deficiency is identified, an immediate determination is made by the qualified person whether the deficiency constitutes a hazard or, though not yet a hazard, needs to be monitored in the monthly inspections.</p> <p>(A) If the qualified person determines that the deficiency constitutes a hazard, the vessel/flotation device is removed from service until it has been corrected. See requirements in § 1926.1417(f).</p> <p>(B) If the qualified person determines that, though not presently a hazard, the deficiency needs to be monitored, the deficiency is checked in the monthly inspections.</p>	<p><u>(3) If any deficiency is identified, an immediate determination shall be made by the qualified person whether the deficiency constitutes a hazard or, though not yet a hazard, needs to be monitored in the periodic inspections.</u></p> <p><u>(A) If the qualified person determines that the deficiency constitutes a hazard, the vessel/flotation device shall be removed from service until it has been corrected. See requirements in Section 5008.1(e).</u></p> <p><u>(B) If the qualified person determines that, though not presently a hazard, the deficiency needs to be monitored, the deficiency shall be checked in the periodic inspections.</u></p>	
<p>(5) Four-year: internal vessel/flotation device inspection. For each four-year inspection:</p> <p>(i) A marine engineer, marine architect, licensed surveyor, or other qualified person who has expertise with respect to vessels/flotation devices surveys the internal portion of the barge, pontoons, vessel, or other means of flotation.</p> <p>(ii) If the surveyor identifies a deficiency, an immediate determination is made by the surveyor as to whether the deficiency constitutes a hazard or, though not yet a hazard, needs to be monitored in the monthly or annual inspections, as appropriate.</p> <p>(A) If the surveyor determines that the deficiency constitutes a hazard, the vessel/flotation device is removed from service until it has been corrected.</p> <p>(B) If the surveyor determines that, though not</p>	<p><u>(e) Four-year internal vessel/flotation device inspection. For each four-year inspection:</u></p> <p><u>(1) A licensed marine engineer or other qualified person who has expertise with respect to vessels/flotation devices surveys the internal portion of the barge, pontoons, vessel, or other means of flotation.</u></p> <p><u>(2) If the surveyor identifies a deficiency, an immediate determination shall be made by the surveyor as to whether the deficiency constitutes a hazard or, though not yet a hazard, needs to be monitored in the periodic or annual inspections, as appropriate.</u></p> <p><u>(A) If the surveyor determines that the deficiency constitutes a hazard, the vessel/flotation device shall be removed from service until it has been corrected.</u></p> <p><u>(B) If the surveyor determines that, though not presently a hazard, the deficiency needs to be</u></p>	

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<p>presently a hazard, the deficiency needs to be monitored, the deficiency is checked in the monthly or annual inspections, as appropriate.</p>	<p><u>monitored, the deficiency shall be checked in the periodic or annual inspections, as appropriate.</u></p>	
<p>(6) Documentation. The monthly and annual inspections required in paragraphs (h)(2) and (h)(4) of this section are documented in accordance with §§ 1926.1412 (e)(3) and 1926.1412(f)(7), respectively, and that the four-year inspection required in paragraph (h)(5) of this section is documented in accordance with § 1926.1412(f)(7), except that the documentation for that inspection must be retained for a minimum of 4 years. All such documents must be made available, during the applicable document retention period, to all persons who conduct inspections in accordance with § 1926.1412. (i) [Reserved.]</p>	<p><u>(f) Documentation. The periodic and annual inspections required in subsections (b) and (d) are documented in accordance with Sections 5031(c)(3)(C) and 5031(d)(5) respectively, and that the four-year inspection required in subsection (e) is documented in accordance with Section 5031(d)(5), except that the documentation for that inspection shall be retained for a minimum of 4 years. All such documents shall be made available, during the applicable document retention period, to all persons who conduct inspections in accordance with Article 100.</u></p>	
<p>(j) Working with a diver. The employer must meet the following additional requirements when working with a diver in the water: (1) If a crane/derrick is used to get a diver into and out of the water, it must not be used for any other purpose until the diver is back on board. When used for more than one diver, it must not be used for any other purpose until all divers are back on board. (2) The operator must remain at the controls of the crane/derrick at all times. (3) In addition to the requirements in §§ 1926.1419 through 1926.1422 (Signals), either:</p>	<p>§6060. Procedures During Dive. *** (b)(4) Working with a diver. The employer shall meet the following additional requirements when working with a diver in the water: (A) If a crane/derrick is used to get a diver into and out of the water, it shall not be used for any other purpose until the diver is back on board. When used for more than one diver, it shall not be used for any other purpose until all divers are back on board. (B) The operator shall remain at the controls of the crane/derrick at all times. (C) In addition to the requirements in</p>	<p>California proposes to amend T8 Section 6060 which pertains to commercial diving to address the federal issues shown here.</p>

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<p>(i) A clear line of sight must be maintained between the operator and tender; or</p> <p>(ii) The signals between the operator and tender must be transmitted electronically.</p> <p>(4) The means used to secure the crane/derrick to the vessel/flotation device (see paragraph (n)(5) of this section) must not allow any amount of shifting in any direction.</p>	<p>Construction Safety Orders, Sections 1617.1-1617.3 <u>Sections 5001 through 5001.2</u> (Signals), either:</p> <p>1. A clear line of sight shall be maintained between the operator and tender; or</p> <p>2. The signals between the operator and tender shall be transmitted electronically.</p> <p>3. The means used to secure the crane/derrick to the vessel/flotation device [see <u>Section 4988.8(e) Construction Safety Orders, Section 1619.3(n)(5)</u>] shall not allow any amount of shifting in any direction.</p>	
<p>(k) Manufacturer's specifications and limitations.</p> <p>(1) The employer must ensure that the barge, pontoons, vessel, or other means of flotation must be capable of withstanding imposed environmental, operational and in-transit loads when used in accordance with the manufacturer's specifications and limitations.</p> <p>(2) The employer must ensure that the manufacturer's specifications and limitations with respect to environmental, operational, and intransit loads for a barge, pontoon, vessel, or other means of flotation are not exceeded or violated.</p> <p>(3) When the manufacturer's specifications and limitations are unavailable, the employer must ensure that the specifications and limitations established by a qualified person with respect to environmental, operational and in-transit loads for the barge, pontoons, vessel, or other means of flotation are not exceeded or violated.</p> <p>(l) [Reserved.]</p>	<p><u>§4988.6. Manufacturer's Specifications and Limitations.</u></p> <p><u>(a) The employer shall ensure that the barge, pontoons, vessel, or other means of flotation are capable of withstanding imposed environmental, operational and in-transit loads when used in accordance with the manufacturer's specifications and limitations.</u></p> <p><u>(b) The employer shall ensure that the manufacturer's specifications and limitations with respect to environmental, operational, and in-transit loads for a barge, pontoon, vessel, or other means of flotation are not exceeded or violated.</u></p> <p><u>(c) When the manufacturer's specifications and limitations are unavailable, the employer shall ensure that the specifications and limitations established by a certified agent qualified with respect to environmental, operational and in-transit loads for the barge, pontoons, vessel, or other means of flotation are not exceeded or violated.</u></p>	

CALIFORNIA STANDARDS COMPARISON

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<p>(m) Floating cranes/derricks. For equipment designed by the manufacturer (or employer) for marine use by permanent attachment to barges, pontoons, vessels or other means of flotation: (1) Load charts. (i) The employer must not exceed the manufacturer load charts applicable to operations on water. When using these charts, the employer must comply with all parameters and limitations (such as dynamic and environmental parameters) applicable to the use of the charts. (ii) The employer must ensure that load charts take into consideration a minimum wind speed of 40 miles per hour. (2) The employer must ensure that the requirements for maximum allowable list and maximum allowable trim as specified in Table M1 of this section are met.</p>	<p><u>§4988.7. Floating Cranes/Derricks.</u> <u>For equipment designed by the manufacturer (or employer) for marine use by permanent attachment to barges, pontoons, vessels or other means of flotation:</u> <u>(a) Load charts.</u> <u>(1) The employer shall not exceed the manufacturer load charts applicable to operations on water. When using these charts, the employer shall comply with all parameters and limitations (such as dynamic and environmental parameters) applicable to the use of the charts.</u> <u>(2) The employer shall ensure that load charts take into consideration a minimum wind speed of 40 miles per hour.</u> <u>(b) The employer shall ensure that the requirements for maximum allowable list and maximum allowable trim as specified in Table M1 of this section are met.</u></p>																																					
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<p>equipment is stable under the conditions specified in Tables M2 and M3 of this section. (Note: Freeboard is the vertical distance between the water line and the main deck of the vessel.)</p>	<p><u>equipment is stable under the conditions specified in Tables M2 and M3 of this section. (NOTE: Freeboard is the vertical distance between the water line and the main deck of the vessel.)</u></p>																																	
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<p>(4) If the equipment is employer made, it must not be used unless the employer has documents demonstrating that the load charts and applicable parameters for use meet the requirements of paragraphs (m)(1) through (3) of this section. Such documents must be signed by a registered professional engineer who is a qualified person with respect to the design of this type of equipment (including the means of flotation).</p>	<p><u>(d) If the equipment is employer-made, it shall not be used unless the employer has documents demonstrating that the load charts and applicable parameters for use meet the requirements of subsections (a) through (c). Such documents shall be signed by a certified agent knowledgeable with respect to the design of this type of equipment (including the means of flotation).</u></p>																																	

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<p>(5) The employer must ensure that the barge, pontoons, vessel or other means of flotation used:</p> <p>(i) Are structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick’s maximum rated capacity with all planned and actual deck loads and ballasted compartments.</p> <p>(ii) Have a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free-surface effect.</p> <p>(iii) Have access to void compartments to allow for inspection and pumping.</p>	<p><u>(e) The employer shall ensure that the barge, pontoons, vessel or other means of flotation used:</u></p> <p><u>(1) Are structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick’s maximum rated capacity with all planned and actual deck loads and ballasted compartments.</u></p> <p><u>(2) Have a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free-surface effect.</u></p> <p><u>(3) Have access to void compartments to allow for inspection and pumping</u></p>	
<p>(n) Land cranes/derricks. For land cranes/derricks used on barges, pontoons, vessels or other means of flotation, the employer must ensure that:</p> <p>(1) The rated capacity of the equipment (including but not limited to modification of load charts) applicable for use on land is reduced to:</p> <p>(i) Account for increased loading from list, trim, wave action, and wind.</p> <p>(ii) Be applicable to a specified location(s) on the specific barge, pontoons, vessel or other means of flotation that will be used, under the environmental conditions expected and encountered.</p> <p>(iii) The conditions required in paragraphs (n)(3) and (n)(4) of this section are met.</p>	<p><u>§4988.8. Land Cranes/Derricks.</u></p> <p><u>For land cranes/derricks used on barges, pontoons, vessels or other means of flotation, the employer shall ensure that:</u></p> <p><u>(a) The rated capacity of the equipment (including but not limited to modification of load charts) applicable for use on land is reduced to:</u></p> <p><u>(1) Account for increased loading from list, trim, wave action, and wind.</u></p> <p><u>(2) Be applicable to a specified location(s) on the specific barge, pontoons, vessel or other means of flotation that will be used, under the environmental conditions expected and encountered.</u></p> <p><u>(3) The conditions required in subsections (c) and (d) are met.</u></p>	
<p>(2) The rated capacity modification required in paragraph (n)(1) of this section is performed by the equipment manufacturer, or a qualified</p>	<p><u>(b) The rated capacity modification required in subsection (a) is performed by the equipment manufacturer, or a certified agent who has</u></p>	

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<p>person who has expertise with respect to both land crane/derrick capacity and the stability of vessels/flotation devices.</p>	<p><u>expertise with respect to both land crane/derrick capacity and the stability of vessels/flotation devices.</u></p>	
<p>(3) For list and trim. (i) The maximum allowable list and the maximum allowable trim for the barge, pontoon, vessel or other means of flotation must not exceed the amount necessary to ensure that the conditions in paragraph (n)(4) of this section are met. In addition, the maximum allowable list and the maximum allowable trim does not exceed the least of the following: 5 degrees, the amount specified by the crane/derrick manufacturer, or, when, an amount is not so specified, the amount specified by the qualified person. (ii) The maximum allowable list and the maximum allowable trim for the land crane/derrick does not exceed the amount specified by the crane/derrick manufacturer, or, when, an amount is not so specified, the amount specified by the qualified person.</p>	<p><u>(c) For list and trim.</u> <u>(1) The maximum allowable list and the maximum allowable trim for the barge, pontoons, vessel or other means of flotation shall not exceed the amount necessary to ensure that the conditions in subsection (d) are met. In addition, the maximum allowable list and the maximum allowable trim shall not exceed the least of the following: 5 degrees, the amount specified by the crane/derrick manufacturer, or, when, an amount is not so specified, the amount specified by the certified agent.</u> <u>(2) The maximum allowable list and the maximum allowable trim for the land crane/derrick shall not exceed the amount specified by the crane/derrick manufacturer, or, when, an amount is not so specified, the amount specified by the certified agent.</u></p>	
<p>(4) For the following conditions: (i) All deck surfaces of the barge, pontoons, vessel or other means of flotation used are above water. (ii) The entire bottom area of the barge, pontoons, vessel or other means of flotation used is submerged.</p>	<p><u>(d) For the following conditions:</u> <u>(1) All deck surfaces of the barge, pontoons, vessel or other means of flotation used are above water.</u> <u>(2) The entire bottom area of the barge, pontoons, vessel or other means of flotation used is submerged.</u></p>	
<p>(5) Physical attachment, corralling, rails system and centerline cable system meet the requirements in Option (1), Option (2), Option</p>	<p><u>(e) Physical attachment, corralling, rails system and centerline cable system shall meet the requirements in Option (1), Option (2), Option</u></p>	

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<p>(3), or Option (4) of this section, and that whichever option is used also meets the requirements of paragraph (n)(5)(v) of this section.</p>	<p><u>(3), or Option (4) of this section, and that whichever option is used shall also meet the requirements of subsection (e)(5).</u></p>	
<p>(i) Option (1)—Physical attachment. The crane/derrick is physically attached to the barge, pontoons, vessel or other means of flotation. Methods of physical attachment include crossed-cable systems attached to the crane/derrick and vessel/flotation device, bolting or welding the crane/derrick to the vessel/flotation device, strapping the crane/derrick to the vessel/flotation device with chains, or other methods of physical attachment.</p>	<p><u>(1) Option (1) – Physical attachment. The crane/derrick is physically attached to the barge, pontoons, vessel or other means of flotation. Methods of physical attachment include crossed-cable systems attached to the crane/derrick and vessel/flotation device, bolting or welding the crane/derrick to the vessel/flotation device, strapping the crane/derrick to the vessel/flotation device with chains, or other methods of physical attachment.</u></p>	
<p>(ii) Option (2)—Corralling. The crane/derrick is prevented from shifting by installing barricade restraints (i.e., a corralling system). Employers must ensure that corralling systems do not allow the equipment to shift by any amount of shifting in any direction.</p>	<p><u>(2) Option (2) – Corralling. The crane/derrick is prevented from shifting by installing barricade restraints (i.e., a corralling system). Employers shall ensure that corralling systems do not allow the equipment to shift by any amount of shifting in any direction.</u></p>	
<p>(iii) Option (3)—Rails. The crane/derrick must be prevented from shifting by being mounted on a rail system. Employers must ensure that rail clamps and rail stops are used unless the system is designed to prevent movement during operation by other means.</p>	<p><u>(3) Option (3) – Rails. The crane/derrick shall be prevented from shifting by being mounted on a rail system. Employers shall ensure that rail clamps and rail stops are used unless the system is designed to prevent movement during operation by other means.</u></p>	
<p>(iv) Option (4)—Centerline cable system. The crane/derrick is prevented from shifting by being mounted to a wire rope system. The employer must ensure that the wire rope system</p>	<p><u>(4) Option (4) – Centerline cable system. The crane/derrick is prevented from shifting by being mounted to a wire rope system. The employer shall ensure that the wire rope</u></p>	

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<p>meets the following requirements:</p> <p>(A) The wire rope and attachments are of sufficient size and strength to support the side load of crane/derrick.</p> <p>(B) The wire rope is attached physically to the vessel/flotation device.</p> <p>(C) The wire rope is attached to the crane/derrick by appropriate attachment methods (such as shackles or sheaves) on the undercarriage, and that the method used will allow the crew to secure the crane/derrick from movement during operation and to move the crane/derrick longitudinally along the vessel/flotation device for repositioning.</p> <p>(D) Means are installed to prevent the crane/derrick from passing the forward or aft end of the wire rope attachments.</p> <p>(E) The crane/derrick is secured from movement during operation.</p>	<p><u>system meets the following requirements:</u></p> <p><u>(A) The wire rope and attachments are of sufficient size and strength to support the side load of the crane/derrick.</u></p> <p><u>(B) The wire rope is attached physically to the vessel/flotation device.</u></p> <p><u>(C) The wire rope is attached to the crane/derrick by appropriate attachment methods (such as shackles or sheaves) on the undercarriage, and that the method used will allow the crew to secure the crane/derrick from movement during operation and to move the crane/derrick longitudinally along the vessel/flotation device for repositioning.</u></p> <p><u>(D) Means are installed to prevent the crane/derrick from passing the forward or aft end of the wire rope attachments.</u></p> <p><u>(E) The crane/derrick is secured from movement during operation.</u></p>	
<p>(v) The systems/means used to comply with Option (1), Option (2), Option (3), or Option (4) of this section are designed by a marine engineer, registered professional engineer familiar with floating crane/derrick design, or qualified person familiar with floating crane/derrick design.</p>	<p><u>(5) The systems/means used to comply with Option (1), Option (2), Option (3), or Option (4) of this section are designed by a licensed marine engineer, or registered professional engineer familiar with floating crane/derrick design.</u></p>	
<p>(6) Exception. For mobile auxiliary cranes used on the deck of a floating crane/derrick, the requirement specified by paragraph (n)(5) of this section to use Option (1), Option (2), Option (3), or Option (4) does not apply when the employer demonstrates implementation of a plan and</p>	<p><u>EXCEPTION TO SUBSECTION (e):</u> <u>For mobile auxiliary cranes used on the deck of a floating crane/derrick, the requirement specified by subsection (e) to use Option (1), Option (2), Option (3), or Option (4) does not apply when the employer demonstrates implementation of a plan and procedures that</u></p>	

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<p>procedures that meet the following requirements:</p> <p>(i) A marine engineer or registered professional engineer familiar with floating crane/derrick design develops and signs a written plan for the use of the mobile auxiliary crane.</p> <p>(ii) The plan is designed so that the applicable requirements of this section are met despite the position, travel, operation, and lack of physical attachment (or corralling, use of rails or cable system) of the mobile auxiliary crane.</p> <p>(iii) The plan specifies the areas of the deck where the mobile auxiliary crane is permitted to be positioned, travel, and operate, and the parameters and limitations of such movements and operation.</p> <p>(iv) The deck is marked to identify the permitted areas for positioning, travel, and operation.</p> <p>(v) The plan specifies the dynamic and environmental conditions that must be present for use of the plan.</p> <p>(vi) If the dynamic and environmental conditions in paragraph (n)(6)(v) of this section are exceeded, the mobile auxiliary crane is attached physically or corralled in accordance with Option (1), Option (2) or Option (4) of paragraph (n)(5) of this section.</p>	<p><u>meet the following requirements:</u></p> <p><u>(1) A marine engineer or registered professional engineer familiar with floating crane/derrick design develops and signs a written plan for the use of the mobile auxiliary crane.</u></p> <p><u>(2) The plan is designed so that the applicable requirements of this section are met despite the position, travel, operation, and lack of physical attachment (or corralling, use of rails or cable system) of the mobile auxiliary crane.</u></p> <p><u>(3) The plan specifies the areas of the deck where the mobile auxiliary crane is permitted to be positioned, travel, and operate, and the parameters and limitations of such movements and operation.</u></p> <p><u>(4) The deck is marked to identify the permitted areas for positioning, travel, and operation.</u></p> <p><u>(5) The plan specifies the dynamic and environmental conditions that shall be present for use of the plan.</u></p> <p><u>(6) If the dynamic and environmental conditions in exception (5) are exceeded, the mobile auxiliary crane shall be attached physically or corralled in accordance with Option (1), Option (2) or Option (4) of subsection (e).</u></p>	
<p>(7) The barge, pontoons, vessel or other means of flotation used:</p> <p>(i) Are structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick's maximum rated capacity with all anticipated deck loads</p>	<p><u>(f) The barge, pontoons, vessel or other means of flotation used:</u></p> <p><u>(1) Are structurally sufficient to withstand the static and dynamic loads of the crane/derrick when operating at the crane/derrick's maximum rated capacity with all anticipated</u></p>	

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<p>and ballasted compartments. (ii) Have a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free surface effect. (iii) Have access to void compartments to allow for inspection and pumping.</p>	<p><u>deck loads and ballasted compartments.</u> <u>(2) Have a subdivided hull with one or more longitudinal watertight bulkheads for reducing the free surface effect.</u> <u>(3) Have access to void compartments to allow for inspection and pumping.</u></p>	
<p>§ 1926.1438 Overhead & gantry cranes.</p>	<p>§1610. General Requirements.</p>	
<p>(a) Permanently installed overhead and gantry cranes. The requirements of § 1910.179, except for § 1910.179(b)(1), and not the requirements of this subpart CC, apply to the following equipment when used in construction and permanently installed in a facility: overhead and gantry cranes, including semigantry, cantilever gantry, wall cranes, storage bridge cranes, and others having the same fundamental characteristics.</p>	<p><u>(a) Cranes and derricks used in construction shall comply with the provisions of General Industry Safety Orders, Article 13, except as supplemented below.</u> <u>(b) Overhead & Gantry Cranes.</u> <u>(1) Permanently installed overhead and gantry cranes. The requirements of General Industry Safety Orders, Article 92, apply to the following equipment when used in construction and permanently installed in a facility: overhead and gantry cranes, including semi-gantry, cantilever gantry, wall cranes, storage bridge cranes, and others having the same fundamental characteristics.</u></p>	<p>Permanently installed overhead and gantry cranes are covered by Article 92 which is state counterpart for 1910.179.</p>
<p>(b) Overhead and gantry cranes that are not permanently installed in a facility. (1) This paragraph applies to the following equipment when used in construction and not permanently installed in a facility: Overhead and gantry cranes, overhead/bridge cranes, semigantry, cantilever gantry, wall cranes, storage bridge cranes, launching gantry cranes, and similar equipment having the same fundamental characteristics, irrespective of</p>	<p><u>(2) Overhead and gantry cranes that are not permanently installed in a facility.</u> <u>(3) This subsection applies to the following equipment when used in construction and not permanently installed in a facility: Overhead and gantry cranes, overhead/bridge cranes, semi-gantry, cantilever gantry, wall cranes, storage bridge cranes, launching gantry cranes, and similar equipment having the same fundamental characteristics, irrespective of</u></p>	

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whether it travels on tracks, wheels, or other means.	<u>whether it travels on tracks, wheels, or other means.</u>	
(2) The following requirements apply to equipment identified in paragraph (b)(1) of this section:	<u>(4) The following requirements apply to equipment identified in subsection (b)(1) of this section:</u>	
(i) Sections 1926.1400 through 1926.1414; §§ 1926.1417 through 1926.1425; § 1926.1426(d), §§ 1926.1427 through 1926.1434; § 1926.1437, § 1926.1439, and § 1926.1441.	<u>(A) All sections of General Industry Safety Orders, Group 13, apply except the following sections: Sections 4928.1(a), 4928.1(b), 5017, 5018, Article 95 and Article 96.</u>	Rather than list the 90% of sections which DO apply, CA proposes to list by exception the 10% that DO NOT apply (easier for stakeholders to understand and apply).
(ii) The following portions of § 1910.179: (A) Paragraphs (b)(5),(6),(7); (e)(1),(3),(5),(6); (f)(1),(4); (g); (h)(1),(3); (k); and (n) of § 1910.179.	<u>(B) The requirements as applicable of General Industry Safety Orders, Article 92, Cranes (Except Boom-Type Mobile Cranes).</u>	GISO Article 92 is the state counterpart of 1910.179.
(B) The definitions in § 1910.179(a) except for “hoist” and “load.” For those words, the definitions in § 1926.1401 apply.		These definitions have been incorporated into Section 4885 which applies to GISO Group 13 and CSO Article 15.
(C) Section 1910.179(b)(2), but only where the equipment identified in paragraph (b)(1) of this section (§ 1926.1438) was manufactured before September 19, 2001.	<u>(C) Applicable Standards: 1. For equipment identified in subsection (b)(1) which was manufactured before July 7, 2011, the standards prescribed by General Industry Safety Orders, Section 4884 shall apply.</u>	Applicable standards are covered by GISO Section 4884 prior to the effective date of this standard. The applicable edition of B30.2 prior to Sept 19, 2001 was the 1967, 1983 or 1996 edition (depending on date of manufacture) v. federal 1967 edition.
(iii) For equipment manufactured on or after September 19, 2001, the following sections of ASME B30.2–2005 (incorporated by reference, see § 1926.6) apply: 2–1.3.1; 2–1.3.2; 2–1.4.1; 2–1.6; 2–1.7.2; 2–1.8.2; 2–1.9.1; 2–1.9.2; 2–1.11; 2–1.12.2; 2–1.13.7; 2–1.14.2; 2–1.14.3; 2–1.14.5; 2–1.15.; 2–2.2.2; 2–3.2.1.1. In addition,	<u>2. For equipment manufactured on or after July 7, 2011, the following sections of ASME B30.2-2005 shall apply: 2-1.3.1; 2-1.3.2; 2-1.4.1; 2-1.6; 2-1.7.2; 2-1.8.2; 2-1.9.1; 2-1.9.2; 2-1.11; 2-1.12.2; 2-1.13.7; 2-1.14.2; 2-1.14.3; 2-1.14.5; 2-1.15.; 2-2.2.2; 2-3.2.1.1. In addition, 2-3.5 applies, except in 2-3.5.1(b),</u>	CA cannot apply a 2005 standard retroactively. B30.2 applies to all equipment manufactured on or after July 7, 2011. (B30.2-1996 applied between 2001 and 2011).

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2–3.5 applies, except in 2–3.5.1(b), “29 CFR 1910.147” is substituted for “ANSI Z244.1.”	“29 CFR 1910.147” is substituted for “ANSI Z244.1.”	
§ 1926.1439 Dedicated pile drivers.	CSO Article 12. Pile Driving and Pile Extraction. §1600. Pile Driving.	
(a) The provisions of subpart CC apply to dedicated pile drivers, except as specified in this section.	*** <u>(u) Dedicated Pile Drivers.</u> <u>(1) The provisions of General Industry Safety Orders, Group 13, apply to dedicated pile drivers. except as follows:</u>	
(b) Section 1926.1416(d)(3) (Anti twoblocking device) does not apply.	<u>(A) Section 5017(a)(8) (Anti-two-blocking device) does not apply.</u>	
(c) Section 1926.1416(e)(4) (Load weighing and similar devices) applies only to dedicated pile drivers manufactured after November 8, 2011.	<u>(B) Section 5017(a)(11) (Load weighing and similar devices) applies only to dedicated pile drivers manufactured after July 7, 2011.</u>	Effective date copied from CSO Section 1619.5(c).
(d) In § 1926.1433, only §§ 1926.1433(d) and (e) apply to dedicated pile drivers.		All sections of Title 8, Group 13, including general requirements, apply to dedicated pile drivers unless specifically excluded.
§ 1926.1440 Sideboom cranes.	§1694. Sideboom Cranes.	
(a) The provisions of this standard apply, except § 1926.1402 (Ground conditions), § 1926.1415 (Safety devices), § 1926.1416 (Operational aids), and § 1926.1427 (Operator qualification and certification).	(b) Effective July 7, 2011, the provisions of this Article 15 apply, except Section 1610.5 (Ground conditions), Section 1615.1 (Safety devices), Section 1615.2 (Operational aids), and Section 1618.1 (Operator Qualification and Certification). <u>the provisions of General Industry Safety Orders, Group 13, apply except Section 4991.1 (Ground Conditions), Section</u>	CSO Article 15 provisions are being moved into GISO Group 13, therefore the July 7, 2011 effective date for CSO still applies.

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	<p><u>5017 (Safety Devices), Section 5018 (Operational Aids), Section 5006.1 (Operator Qualification and Certification).</u></p>	
<p>(b) Section 1926.1426 (Free fall and controlled load lowering) applies, except §1926.1426(a)(2)(i). Sideboom cranes in which the boom is designed to free fall (live boom) are permitted only if manufactured prior to November 8, 2010.</p>	<p>(c) Section 4928.1 1616.5 (Free fall and controlled load lowering) applies, except Section 4928.1(a)(2)(A) 1615.5(a)(2)(A). Sideboom cranes in which the boom is designed to free fall (live boom) are permitted only if manufactured prior to July 7, 2011.</p>	
<p>(c) Sideboom cranes mounted on wheel or crawler tractors must meet all of the following requirements of ASME B30.14–2004 (incorporated by reference, see § 1926.6):</p> <ol style="list-style-type: none"> (1) Section 14–1.1 (“Load Ratings”). (2) Section 14–1.3 (“Side Boom Tractor Travel”). (3) Section 14–1.5 (“Ropes and Reeving Accessories”). (4) Section 14–1.7.1 (“Booms”). (5) Section 14–1.7.2 (“General Requirements—Exhaust Gases”). (6) Section 14–1.7.3 (“General Requirements—Stabilizers (Wheel-Type Side Boom Tractors”). (7) Section 14–1.7.4 (“General Requirements—Welded Construction”). (8) Section 14–1.7.6 (“General Requirements—Clutch and Brake Protection”). (9) Section 14–2.2.2 (“Testing—Rated Load Test”), except that it applies only to equipment that has been altered or modified. (10) In section 14–3.1.2 (“Operator Qualifications”), paragraph (a), except the 	<p>(d) Sideboom cranes mounted on wheel or crawler tractors shall meet all of the following requirements of ASME B30.14-2004 (incorporated by reference):</p> <ol style="list-style-type: none"> (1) Section 14-1.1 (“Load Ratings”). (2) Section 14-1.3 (“Side Boom Tractor Travel”). (3) Section 14-1.5 (“Ropes and Reeving Accessories”). (4) Section 14-1.7.1 (“Booms”). (5) Section 14-1.7.2 (“General Requirements - Exhaust Gases”). (6) Section 14-1.7.3 (“General requirements - Stabilizers (Wheel-Type Side Boom Tractors”). (7) Section 14-1.7.4 (“General Requirements - Welded Construction”). (8) Section 14-1.7.6 (“General Requirements - Clutch and Brake Protection”). (9) Section 14-2.2.2 (“Testing - Rated Load Test”), except that it applies only to equipment that has been altered or modified. (10) In section 14-3.1.2 (“Operator Qualifications”), paragraph (a), except the 	

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<p>phrase “When required by law.” (11) In section 14–3.1.3 (“Operating Practices”), paragraphs (e), (f)(1)—(f)(4), (f)(6), (f)(7), (h), and (i). (12) In section 14–3.2.3 (“Moving the Load”), paragraphs (j), (l), and (m).</p>	<p>phrase “When required by law.” (11) In section 14-3.1.3 (“Operating Practices”), paragraphs (e), (f)(1)-(f)(4), (f)(6), (f)(7), (h), and (i). (12) In section 14-3.2.3 (“Moving the Load”), paragraphs (j), (l), and (m).</p>	
<p>§ 1926.1441 Equipment with a rated hoisting/lifting capacity of 2,000 pounds or less.</p>	<p><u>§4883. Equipment with a Rated Hoisting/Lifting Capacity of 2,000 Pounds or Less (Cranes and Derricks in Construction)</u></p>	<p>Federal requirement for cranes and derricks in construction operations.</p>
<p>The following paragraphs of this section specify requirements for employers using equipment with a maximum rated hoisting/ lifting capacity of 2,000 pounds or less.</p>	<p><u>The following subsections specify requirements for employers using equipment in construction with a maximum rated hoisting/lifting capacity of 2,000 pounds or less.</u></p>	
<p>(a) The employer using this equipment must comply with the following provisions of this subpart: § 1926.1400 (Scope); § 1926.1401 (Definitions); § 1926.1402 (Ground conditions); § 1926.1403 (Assembly/disassembly—selection of manufacturer or employer procedures); § 1926.1406 (Assembly/disassembly—employer procedures); §§ 1926.1407 through 1926.1411 (Power line safety); § 1926.1412(c) (Post-assembly); §§ 1926.1413 through 1926.1414 (Wire rope); § 1926.1418 (Authority to stop operation); §§ 1926.1419 through 1926.1422 (Signals); § 1926.1423 (Fall protection);</p>	<p><u>(a) The employer using this equipment shall comply with the following provisions of Group 13:</u> <u>Section 4880 (Scope);</u> <u>Section 4884.1 (Equipment Modifications);</u> <u>Section 4885 (Definitions);</u> <u>Section 4928.1 (Free Fall and Controlled Load Lowering);</u> <u>Section 4991.1 (Ground Conditions);</u> <u>Section 4994(f) (Multiple Crane/Derrick Lifts - Supplemental Requirements);</u> <u>Sections 5001 through 5001.2 (Signals);</u> <u>Section 5002 (Overhead Loads) [except for Section 5002(c)(3) (qualified rigger)];</u> <u>Sections 5003.1, 5003.2, 5003.3, 5003.4, and 5010.4 (Power Line Safety);</u> <u>Section 5008(c) (Authority to stop operation);</u> <u>Section 5010 (Assembly/Disassembly -</u></p>	

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<p>§ 1926.1425 (Keeping clear of the load) (except for § 1926.1425(c)(3) (qualified rigger)); § 1926.1426 (Free fall and controlled load lowering); § 1926.1432 (Multiple crane/derrick lifts – supplemental requirements); § 1926.1434 (Equipment modifications); § 1926.1435 (Tower cranes); § 1926.1436 (Derricks); § 1926.1437 (Floating cranes/derricks and land cranes/derricks on barges); § 1926.1438 (Overhead & gantry cranes).</p>	<p><u>Selection of Manufacturer or Employer Procedures);</u> <u>Section 5010.3 (Assembly/Disassembly – Employer Procedures);</u> <u>Section 5011 (Fall Protection);</u> <u>Section 5031.1 (Inspection - Post-Assembly);</u> <u>Sections 5031 and 5036-5037 (Wire Rope);</u> <u>Article 95 (Derricks);</u> <u>Article 96 (Tower Cranes);</u> <u>Article 97.1 (Floating Cranes/Derricks and Land Cranes/Derricks on Barges), and Section 6060(b);</u> <u>CSO Section 1610(b) (Overhead & Gantry Cranes).</u></p>	
<p>(b) Assembly/disassembly. (1) In addition to compliance with §§ 1926.1403 (Assembly/disassembly—selection of manufacturer or employer procedures) and 1926.1406 (Assembly/disassembly—employer procedures), the employer must also comply with § 1926.1441(b)(2)–(3).</p>	<p><u>(b) Assembly/disassembly.</u> <u>(1) In addition to compliance with Section 5010 (Assembly/Disassembly—Selection of Manufacturer or Employer Procedures) and Section 5010.3 (Assembly/Disassembly—Employer Procedures), the employer shall also comply with Section 4883(b)(2)-(3).</u></p>	
<p>(2) Components and configuration. The employer must ensure that: (i) The selection of components, and the configuration of the equipment, that affect the capacity or safe operation of the equipment complies with either the: (A) Manufacturer instructions, recommendations, limitations, and specifications. When these documents and information are unavailable, a registered professional engineer familiar with the type of equipment involved must approve, in writing,</p>	<p><u>(2) Components and configuration.</u> <u>The employer shall ensure that:</u> <u>(A) The selection of components, and the configuration of the equipment, that affect the capacity or safe operation of the equipment complies with either the:</u> <u>1. Manufacturer instructions, recommendations, limitations, and specifications. When these documents and information are unavailable, a certified agent familiar with the type of equipment involved shall approve, in writing, the selection and</u></p>	

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<p>the selection and configuration of components; or (B) Approved modifications that meet the requirements of § 1926.1434 (Equipment modifications). (ii) Post-assembly inspection. Upon completion of assembly, the equipment is inspected to ensure that it is in compliance with paragraph (b)(2)(i) of this section (see § 1926.1412(c) for post-assembly inspection requirements).</p>	<p><u>configuration of components; or</u> <u>2. Modifications that meet the requirements of Section 4884.1 (Equipment Modifications).</u> <u>(B) Post-assembly inspection. Upon completion of assembly, the equipment is inspected to ensure that it is in compliance with subsection (b)(2)(A) (see Section 5031.1 for post-assembly inspection requirements).</u></p>	
<p>(3) Manufacturer prohibitions. The employer must comply with applicable manufacturer prohibitions.</p>	<p><u>(3) Manufacturer prohibitions. The employer shall comply with applicable manufacturer prohibitions.</u></p>	
<p>(c) Operation—procedures. (1) The employer must comply with all manufacturer procedures applicable to the operational functions of the equipment, including its use with attachments.</p>	<p><u>(c) Operation – Procedures.</u> <u>(1) The employer shall comply with all manufacturer procedures applicable to the operational functions of the equipment, including its use with attachments.</u></p>	
<p>(2) Unavailable operation procedures. The employer must: (i) When the manufacturer’s procedures are unavailable, develop, and ensure compliance with, all procedures necessary for the safe operation of the equipment and attachments. (ii) Ensure that procedures for the operational controls are developed by a qualified person. (iii) Ensure that procedures related to the capacity of the equipment are developed and signed by a registered professional engineer familiar with the equipment.</p>	<p><u>(2) Unavailable operation procedures.</u> <u>The employer shall:</u> <u>(A) When the manufacturer’s procedures are unavailable, develop, and ensure compliance with, all procedures necessary for the safe operation of the equipment and attachments.</u> <u>(B) Ensure that procedures for the operational controls are developed by a qualified person.</u> <u>(C) Ensure that procedures related to the capacity of the equipment are developed and signed by a certified agent familiar with the equipment.</u></p>	
<p>(3) Accessibility. The employer must ensure that:</p>	<p><u>(3) Accessibility. The employer shall ensure that:</u></p>	

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<p>(i) The load chart is available to the operator at the control station;</p> <p>(ii) Procedures applicable to the operation of the equipment, recommended operating speeds, special hazard warnings, instructions, and operator’s manual are readily available for use by the operator.</p> <p>(iii) When rated capacities are available at the control station only in electronic form and a failure occurs that makes the rated capacities inaccessible, the operator immediately ceases operations or follows safe shut-down procedures until the rated capacities (in electronic or other form) are available.</p>	<p><u>(A) The load chart is available to the operator at the control station;</u></p> <p><u>(B) Procedures applicable to the operation of the equipment, recommended operating speeds, special hazard warnings, instructions, and operator’s manual are readily available for use by the operator.</u></p> <p><u>(C) When rated capacities are available at the control station only in electronic form and a failure occurs that makes the rated capacities inaccessible, the operator immediately ceases operations or follows safe shut-down procedures until the rated capacities (in electronic or other form) are available.</u></p>	
<p>(d) Safety devices and operational aids.</p> <p>(1) The employer must ensure that safety devices and operational aids that are part of the original equipment are maintained in accordance with manufacturer procedures.</p>	<p><u>(d) Safety devices and operational aids.</u></p> <p><u>(1) The employer shall ensure that safety devices and operational aids that are part of the original equipment are maintained in accordance with manufacturer procedures.</u></p>	
<p>(2) Anti two-blocking. The employer must ensure that equipment covered by this section manufactured more than one year after November 8, 2010 have either an anti two-block device that meets the requirements of § 1926.1416(d)(3), or is designed so that, in the event of a two-block situation, no damage or load failure will occur (for example, by using a power unit that stalls in response to a two-block situation).</p>	<p><u>(2) Anti-two-blocking. The employer shall ensure that boom-type cranes covered by this section have either an anti-two-block device that meet the requirements of Section 4924(d), or are designed so that, in the event of a two-block situation, no damage or load failure will occur.</u></p>	<p>The federal term “Equipment” is unclear. State verbiage is more specific. The 2010 date removes compliant equipment manufactured before that date, so it was removed from state verbiage. The federal parenthetical example was also perceived as potentially being limiting and was removed.</p>
<p>(e) Operator qualifications. The employer must train each operator, prior to operating the equipment, on the safe operation of the type of</p>	<p><u>(e) Operator qualifications. Section 5006 shall apply to operation of boom-type cranes with a rated hoisting/lifting capacity of 2,000 pounds</u></p>	<p>Training and qualifications are covered by Section 5006.</p>

CALIFORNIA STANDARDS COMPARISON

SOURCE OF FEDERAL OSHA STANDARD(S):

SCOPE: Applicable throughout state unless otherwise noted.

equipment the operator will be using.	<u>or less.</u>	
(f) Signal person qualifications. The employer must train each signal person in the proper use of signals applicable to the use of the equipment. (g) [Reserved.]		This is duplicative; it is already required by Section 4883(a) which incorporates Sections 5001-5001.2 [1926.1419-1422]. Training is also required by Section 3203.
(h) Inspections. The employer must ensure that equipment is inspected in accordance with manufacturer procedures. (i) [Reserved.]	<u>(f) Inspections. The employer shall ensure that boom-type cranes are inspected in accordance with manufacturer procedures.</u>	
(j) Hoisting personnel. The employer must ensure that equipment covered by this section is not used to hoist personnel.	<u>(g) Hoisting personnel. Equipment covered by this section shall not be used to hoist personnel.</u>	
(k) Design. The employer must ensure that the equipment is designed by a qualified engineer.	<u>(h) Design. The employer shall ensure that all non-original equipment manufactured (OEM) lifting equipment shall be approved by a qualified registered engineer.</u>	
§ 1926.1442 Severability.		
Should a court of competent jurisdiction hold any provision(s) of subpart CC to be invalid, such action shall not affect any other provision of the subpart.		This is non-regulatory language unenforceable under the operational procedures and policies of the Division of Occupational Safety and Health and therefore not applicable.

**SEPTEMBER 9-10, 2014
ADVISORY COMMITTEE MEETING**

**PROPOSAL TO CONSOLIDATE
CONSTRUCTION SAFETY ORDERS, ARTICLE 15
(CRANES AND DERRICKS IN CONSTRUCTION), INTO
GENERAL INDUSTRY SAFETY ORDERS, GROUP 13
(CRANES AND OTHER HOISTING EQUIPMENT)**

HYPERLINKS TO MEETING DOCUMENTS:

[ADVISORY COMMITTEE ROSTER](#)

[ADVISORY COMMITTEE MINUTES](#)

**JANUARY 21, 2015
SUBCOMMITTEE MEETING**

**PROPOSAL TO CONSOLIDATE
CONSTRUCTION SAFETY ORDERS, ARTICLE 15
(CRANES AND DERRICKS IN CONSTRUCTION), INTO
GENERAL INDUSTRY SAFETY ORDERS, GROUP 13
(CRANES AND OTHER HOISTING EQUIPMENT)**

HYPERLINKS TO MEETING DOCUMENTS:

[SUBCOMMITTEE ROSTER](#)

[SUBCOMMITTEE MINUTES](#)

**MARCH 25-26, 2015
ADVISORY COMMITTEE MEETING**

**PROPOSAL TO CONSOLIDATE
CONSTRUCTION SAFETY ORDERS, ARTICLE 15
(CRANES AND DERRICKS IN CONSTRUCTION), INTO
GENERAL INDUSTRY SAFETY ORDERS, GROUP 13
(CRANES AND OTHER HOISTING EQUIPMENT)**

HYPERLINKS TO MEETING DOCUMENTS:

[ADVISORY COMMITTEE ROSTER](#)

[ADVISORY COMMITTEE MINUTES](#)

**JULY 22-23, 2015
ADVISORY COMMITTEE MEETING**

**PROPOSAL TO CONSOLIDATE
CONSTRUCTION SAFETY ORDERS, ARTICLE 15
(CRANES AND DERRICKS IN CONSTRUCTION), INTO
GENERAL INDUSTRY SAFETY ORDERS, GROUP 13
(CRANES AND OTHER HOISTING EQUIPMENT)**

HYPERLINKS TO MEETING DOCUMENTS:

[ADVISORY COMMITTEE ROSTER](#)

[ADVISORY COMMITTEE MINUTES](#)

**OCTOBER 7-8, 2015
ADVISORY COMMITTEE MEETING**

**PROPOSAL TO CONSOLIDATE
CONSTRUCTION SAFETY ORDERS, ARTICLE 15
(CRANES AND DERRICKS IN CONSTRUCTION), INTO
GENERAL INDUSTRY SAFETY ORDERS, GROUP 13
(CRANES AND OTHER HOISTING EQUIPMENT)**

HYPERLINKS TO MEETING DOCUMENTS:

[ADVISORY COMMITTEE ROSTER](#)

[ADVISORY COMMITTEE MINUTES](#)

Occupational Safety and Health Standards Board

Business Meeting

Occupational Safety and Health Standards Board

Proposed Emergency Safety Order
For Re-adoption
(GOV. CODE SEC. 11346.1)

COVID-19 Prevention

MOVED, That the following resolution be adopted:

WHEREAS, The Occupational Safety and Health Standards Board (Board) finds that unless a regulation is adopted on an emergency basis, the COVID-19 pandemic poses a real and substantial risk of occupational exposure to harmful effects of the SARS-CoV-2 virus that causes COVID-19, and that immediate action is necessary to mitigate this risk by providing more clear direction to employers on how to safeguard employees to the extent that the nature of the work reasonably permits. The Board further adopts and makes findings set forth in the Finding of Emergency that is part of the Notice of Proposed Emergency Action prepared in this matter. Therefore, be it

RESOLVED, that based on the finding stated above, the Board finds that amendments to Title 8, California Code of Regulations, Chapter 4, Subchapter 7, new sections 3205, 3205.1, 3205.2, 3205.3 and 3205.4 of the General Industry Safety Orders, must be adopted on an emergency basis for the immediate and continued preservation of the public health and safety in the workplace, and general welfare in the workplace; and be it further

RESOLVED by the Board, at a meeting held via teleconference and videoconference in Sacramento, California, on May 20, 2021 (in accordance with Executive Orders N-29-20 and N-33-20), that the proposed amendments of Title 8, California Code of Regulations, Chapter 4, Subchapter 7, new sections 3205, 3205.1, 3205.2, 3205.3 and 3205.4 of the General Industry Safety Orders, appended hereto, be adopted as an emergency regulation; and be it further

RESOLVED that the Board shall file with the Office of Administrative Law a sufficient number of copies of said filing documents and a copy of the rulemaking file for use by the Office of Administrative Law.

OCCUPATIONAL SAFETY AND HEALTH
STANDARDS BOARD

DAVE THOMAS, CHAIRMAN

Certified As A Regulation
Of the Occupational Safety
And Health Standards Board

BY: _____
Christina Shupe, Executive Officer

DATED: May 20, 2021

**TITLE 8
GENERAL INDUSTRY SAFETY ORDERS**

**PROPOSED EMERGENCY TEMPORARY STANDARD
FOR RE-ADOPTION**

**CHAPTER 4, SUBCHAPTER 7,
NEW SECTIONS 3205, 3205.1, 3205.2,
3205.3, AND 3205.4**

COVID-19 PREVENTION

HYPERLINKS TO RULEMAKING DOCUMENTS:

**[NOTICE OF PROPOSAL FOR READOPTION OF
EMERGENCY ACTION](#)**

[FINDING OF EMERGENCY/INFORMATIVE DIGEST](#)

[PROPOSED REGULATORY TEXT FOR READOPTION](#)

**[PROPOSED REGULATORY TEXT FOR READOPTION
\(SHOWING CHANGES FROM CURRENT EMERGENCY
REGULATION – COURTESY COPY\)](#)**

Occupational Safety and Health Standards Board

Business Meeting

Proposed Variance Decisions

**CONSENT CALENDAR—PROPOSED VARIANCE DECISIONS
MAY 20, 2021, MONTHLY BUSINESS MEETING
OF THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD**

A. LOS ANGELES WORLD AIRPORTS— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
18-V-331M1	Los Angeles World Airports	Elevator	GRANT

B. SUMMERHILL APARTMENT COMMUNITIES— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
19-V-296M1	SummerHill Apartment Communities	Elevator	GRANT

C. PLANNED PARENTHOOD: SHASTA-DIABLO, INC.— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
19-V-341M1	Planned Parenthood: Shasta-Diablo, Inc.	Elevator	GRANT

D. ANTON MILPITAS 730, LLC — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
19-V-403M1	Anton Milpitas 730, LLC	Elevator	GRANT

E. 740 ALVARADO JV, LLC— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
20-V-195	740 Alvarado JV, LLC	Elevator	GRANT

F. LOS ANGELES WORLD AIRPORTS — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
20-V-255M1	Los Angeles World Airports	Elevator	GRANT

G. ALAMEDA BLOCK 9 LP — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
20-V-304M1	Alameda Block 9 LP	Elevator	GRANT

H. OTIS ELEVATOR (GROUP IV) GEN2(O) AND/OR GEN2L ALTERATIONS— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
20-V-446	Douglas Emmett 2015 LLC	Elevator	GRANT

I. OTIS GEN2(O) AND/OR GEN2L ELEVATORS (GROUP IV) — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
20-V-496	La Jolla Property Owner, LLC	Elevator	GRANT

J. SCHINDLER MODEL 3300 ELEVATORS WITH SIL-RATED DRIVE TO DE-ENERGIZE DRIVE MOTOR (GROUP IV) — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
21-V-018	E On Harvard, LLC	Elevator	GRANT
21-V-045	Welcome to the Dairy, LLC	Elevator	GRANT
21-V-046	Oregon Trail, LLC	Elevator	GRANT
21-V-047	LINC-CORE San Pedro Lofts, LP	Elevator	GRANT
21-V-048	Chateau Celeste Incorporated	Elevator	GRANT
21-V-049	Ball Horticulture Companydba PanAmerican Seed Co.	Elevator	GRANT

21-V-050	4900 Los Feliz Investors, LLC	Elevator	GRANT
21-V-051	Vista Global Academies	Elevator	GRANT
21-V-063	M & A Gabae, A California Limited Partnership	Elevator	GRANT
21-V-064	Latigo Thousand Oaks, LLC	Elevator	GRANT
21-V-066	751 Oliver LLC	Elevator	GRANT
21-V-067	T&M Properties, LLC	Elevator	GRANT
21-V-077	Live Work Create Equity LLC	Elevator	GRANT
21-V-079	St. Anton Tasman East LP	Elevator	GRANT
21-V-080	2922 S. Crenshaw Blvd (LA) Owner, LLC	Elevator	GRANT

K. OTIS GEN2S ELEVATORS (GROUP IV)— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
21-V-042	City of South Francisco	Elevator	GRANT
21-V-043	St. Andrews Palace, LLC	Elevator	GRANT
21-V-044	Violet QOZB Owner, LLC	Elevator	GRANT
21-V-069	Pulte Home Company LLC	Elevator	GRANT
21-V-070	Bakersfield University Office Center, L.P.	Elevator	GRANT
21-V-071	Folsom Cordova Unified School District	Elevator	GRANT
21-V-072	KLACP, LLC Golden Bridge International Investment, Inc.	Elevator	GRANT
21-V-073	Westwood Regent, LLC	Elevator	GRANT
21-V-074	ABR Realty LLC	Elevator	GRANT
21-V-078	The Church of Jesus Christ of Latter Day Saints	Elevator	GRANT
21-V-086	211 Brand LLC	Elevator	GRANT
21-V-087	San Fernando Studios LP	Elevator	GRANT

21-V-088	City of Hope National Medical Center	Elevator	GRANT
21-V-089	4Mica LP	Elevator	GRANT
21-V-090	17422 Derian Irvine LLC	Elevator	GRANT
21-V-091	748-762 Kingsley Drive, LLC	Elevator	GRANT

L. SCHINDLER MODEL 3300 ELEVATORS WITH VARIANT GOV. ROPES & SHEAVES (GROUP IV) — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
21-V-052	Coliseum Place II, L.P.	Elevator	GRANT
21-V-053	La Jolla Cove Motel and Hotel Apartments, LLC	Elevator	GRANT
21-V-054	Onni Santa Monica Limited Partnership	Elevator	GRANT
21-V-065	Latigo Thousand Oaks, LLC	Elevator	GRANT
21-V-068	Serrano Square, LLC	Elevator	GRANT
21-V-076	Planned Parenthood: Shasta-Diablo, Inc.	Elevator	GRANT
21-V-092	Crescent Developments, LLC	Elevator	GRANT

M. KONE MONOSPACE 500 ELEVATORS — HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
21-V-055	Aram Shorvoghlian	Elevator	GRANT
21-V-056	Associates Equity Funds	Elevator	GRANT
21-V-057	Pulte Home Company, LLC	Elevator	GRANT
21-V-062	TP SPE LLC	Elevator	GRANT

N. MITSUBISHI ELEVATORS (GROUP IV)— HEARD APRIL 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
21-V-058	KR Oyster Point I, LLC	Elevator	GRANT
21-V-059	KR Oyster Point I, LLC	Elevator	GRANT
21-V-060	KR Oyster Point I, LLC	Elevator	GRANT

O. KONE ECOSPACE ELEVATORS (GROUP IV—SUSPENSION ROPE DIAMETER) — HEARD April 21, 2021

OSHSB FILE NUMBER	APPLICANT NAME	SAFETY ORDERS	PROPOSED DECISION
21-V-082	Google	Elevator	GRANT
21-V-083	Google	Elevator	GRANT
21-V-084	Google	Elevator	GRANT
21-V-085	Google	Elevator	GRANT

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application to Modify)
Permanent Variance by:)
)
Los Angeles World Airports)
)
_____)

OSHSB FILE No. 18-V-331M1
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application to Modify Permanent Variance by: <p style="text-align: center;">Los Angeles World Airports</p>	OSHSB File No.: 18-V-331M1 <p style="text-align: center;"><u>PROPOSED DECISION</u></p> Hearing Date: April 21, 2021
--	--

A. The following person or entity (“Applicant”) has applied for a modification of permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, for each elevator having the specified preexisting variance location address of record:

Preexisting OSHSB File No.	Applicant Name	Preexisting Variance Address of Record
18-V-331	Los Angeles World Airports	LAWA Midfield Satellite Concourse North 380 World Way Los Angeles, CA

B. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq. of the Board’s procedural regulations.

C. Procedural Matters:

1. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Dan Leacox of Leacox & Associates, appeared on behalf of the Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff in a technical advisory role apart from the Board.
3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: the subject modification of permanent variance application captioned above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application(s) for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, Review Draft 1 Proposed Decision as PD-5, and official

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

notice taken of the Board's rulemaking records and variance decisions concerning the safety order provisions from which variance has been requested. On April 21, 2021, the hearing and record closed, and the matter was taken under submission by the Hearing Officer.

D. Based on the record of this hearing, the Board makes the following findings of fact:

1. The Applicant requests modification of the address of the unchanging variance location specified within Board records for each elevator the subject of previously granted Permanent Variance 18-V-331.
2. Application Section 3, declared to be wholly truthful under penalty of perjury by Application signatory, states facts upon which reasonably may be based a finding that the address, specified in the records of the Board, at which Permanent Variance 18-V-331 is in effect, in fact is more completely, and correctly the different address information specified in below subsection D.5.
3. The Division has evaluated the request for modification of variance location address, finds no issue with it, and recommends that the application for modification be granted subject to the same conditions of the Decision and Order in OSHSB Permanent Variance File No. 18-V-331.
4. The Board finds the above subpart D.2 referenced declaration to be credible, uncontroverted, and consistent with available, sufficient facts, and of no bearing as to the finding of equivalent occupational health and safety upon which Grant of preexisting Permanent Variance 18-V-331 was, in part, based.
5. The Board finds the correct address by which to designate the location of each elevator the subject of Permanent Variance No. 18-V-331 (see Appendix 1), to be:

LAWA Midfield Satellite Concourse North
380 World Way (5 units)
384 World Way (25 units)
Los Angeles, CA

E. Decision and Order:

1. Permanent Variance Application No. 18-V-331M1 is conditionally GRANTED, thereby modifying Board records, such that, without change in variance location, each elevator being the subject of Permanent Variance No. 18-V-331 and 18-V-331M1 (see Appendix 1), and shall have the following address designation:

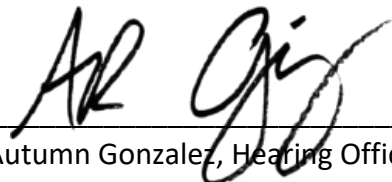
Proposed Variance Decision
OSHSB File No. 18-V-331M1
Hearing Date: April 21, 2021

LAWA Midfield Satellite Concourse North
380 World Way (5 units)
384 World Way (25 units)
Los Angeles, CA

2. Permanent Variance No. 18-V-331, being only modified as to the subject location address specified in above Decision and Order Section 1, is otherwise unchanged and remaining in full force and effect, as hereby incorporated by reference into this Decision and Order of Permanent Variance No.18-V-331.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021


Autumn Gonzalez, Hearing Officer

Appendix 1

LAWA Midfield Satellite Concourse North, 380 World Way, Los Angeles, California

Gen20 Elevator Unit Identifications

GTW-G1-EL01	GTW-G1-EL02	GTW-G1-EL03	GTW-G1-EL04	GTW-G1-EL05
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LAWA Midfield Satellite Concourse North, 384 World Way, Los Angeles, California

Gen20 Elevator Unit Identifications

MSC-C2-EL01	MSC-C4-EL02	MSC-N2-EL01	MSC-N5-EL01	MSC-S1-EL01
MSC-C2-EL02	MSC-C4-EL03	MSC-N2-EL02		MSC-S1-EL02
MSC-C2-EL03	MSC-C4-EL04		MSC-N6-EL01	
MSC-C2-EL04	MSC-C4-EL05	MSC-N4-EL01		MSC-S2-EL01
MSC-C2-EL05		MSC-N4-EL02	MSC-N7-EL01	
	MSC-N1-EL01	MSC-N4-EL03	MSC-N7-EL02	
MSC-C4-EL01	MSC-N1-EL02		MSC-N7-EL03	

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application to Modify)
Permanent Variance by:)
)
SummerHill Apartment Communities)
)
_____)

OSHSB FILE No. 19-V-296M1
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application to Modify Permanent Variance by: SummerHill Apartment Communities	OSHSB File No.: 19-V-296M1 <u>PROPOSED DECISION</u> Hearing Date: April 21, 2021
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A. The following person or entity (“Applicant”) has applied for a modification of permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, for each elevator having the specified preexisting variance location address of record:

Preexisting OSHSB File No.	Applicant Name	Preexisting Variance Address of Record
19-V-296	SummerHill Apartment Communities	Centre Point 1500 Centre Pointe Drive Milpitas, CA

B. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.

C. Procedural Matters:

1. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Dan Leacox of Leacox & Associates, appeared on behalf of the Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff in a technical advisory role apart from the Board.
3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: the subject modification of permanent variance application captioned above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application(s) for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s rulemaking records and variance decisions concerning the

¹ Unless otherwise noted, all references are to title 8, California Code of Regulations.

safety order provisions from which variance has been requested. On April 21, 2021, the hearing and record closed, and the matter was taken under submission by the Hearing Officer.

D. Based on the record of this hearing, the Board makes the following findings of fact:

1. The Applicant requests modification of the address of the unchanging variance location specified within Board records for each elevator the subject of previously granted Permanent Variance 19-V-296.
2. Application Section 3, declared to be wholly truthful under penalty of perjury by Application signatory, states facts upon which reasonably may be based a finding that the address, specified in the records of the Board, at which Permanent Variance 19-V-296 is in effect, in fact is more completely, and correctly the different address information specified in below subsection D.5.
3. The Division has evaluated the request for modification of variance location address, finds no issue with it, and recommends that the application for modification be granted subject to the same conditions of the Decision and Order in OSHSB Permanent Variance File No. 19-V-296.
4. The Board finds the above subpart D.2 referenced declaration to be credible, uncontroverted, and consistent with available, sufficient facts, and of no bearing as to the finding of equivalent occupational health and safety upon which Grant of preexisting Permanent Variance 19-V-296 was, in part, based.
5. The Board finds the correct address by which to designate the location of each elevator the subject of Permanent Variance No. 19-V-296, to be:

312 Gates Drive
Milpitas, CA

E. Decision and Order:

1. Permanent Variance Application No. 19-V-296M1 is conditionally GRANTED, thereby modifying Board records, such that, without change in variance location, each elevator being the subject of Permanent Variance Nos. 19-V-296, and 19-V-296M1, shall have the following address designation:


312 Gates Drive
Milpitas, CA

Proposed Variance Decision
OSHSB File No. 19-V-296M1
Hearing Date: April 21, 2021

2. Permanent Variance No. 19-V-296, being only modified as to the subject location address specified in above Decision and Order Section 1, is otherwise unchanged and remaining in full force and effect, as hereby incorporated by reference into this Decision and Order of Permanent Variance No. 19-V-296M1.

Pursuant to section 426, subdivision(b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application to Modify)
Permanent Variance by:)
)
Planned Parenthood: Shasta-Diablo, Inc.)
)
_____)

OSHSB FILE No. 19-V-341M1
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application to Modify Permanent Variance by: <p style="text-align: center;">Planned Parenthood: Shasta-Diablo, Inc.</p>	OSHSB File No.: 19-V-341M1 PROPOSED DECISION Hearing Date: April 21, 2021
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A. The following person or entity (“Applicant”) has applied for a modification of permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, for each elevator having the below specified preexisting variance location address of record:

Preexisting OSHSB File No.	Applicant Name	Variance Address of Record	Preexisting Number of Elevators
19-V-341	Planned Parenthood: Shasta-Diablo, Inc.	1522 Bush Street San Francisco CA	2

B. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.

C. Procedural Matters:

1. This hearing was held on April 21, 2021, in Sacramento, California, and via teleconference, by Occupational Safety and Health Standards Board (“Board”) with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Jennifer Linares appeared on behalf of the Applicants’ representative, the Schindler Elevator Company; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff.

¹ Unless otherwise noted, all references are to title 8, California Code of Regulations.

3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: the subject modification of permanent variance application captioned above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application(s) for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board's files, records, recordings and decisions concerning the Elevator Safety Order requirements from which variance shall issue. On April 21, 2021, the hearing and record closed, and the matter was taken under submission by the Hearing Officer.

D. Findings and Basis:

1. The Applicant requests modification of the quantity of elevators the subject of previously granted Permanent Variance No. 19-V-341, to decrease the quantity of elevators from two (2) to one (1).
2. Application Section 3, declared to be wholly truthful under penalty of perjury by the Applicant signatory, states facts upon which to reasonably find that additional requested subject elevator is to be of the same manufacturer model type and material technical characteristics and specifications, as the existing elevator the subject of Permanent Variance No. 19-V-341.
3. The Division has evaluated the immediate request for modification of variance, finds no issue with it, and recommends that the application for modification be granted subject to the same conditions of the Decision and Order in OSHSB Permanent Variance File No. 19-V-341.
4. The Board finds the Section 2 referenced declaration to be credible, uncontroverted, and consistent with available, sufficient facts, and finds modification of Permanent Variance 19-V-341, decreasing the quantity of subject elevators from two (2) to one (1), to be of no bearing upon the finding of equivalent occupational health and safety upon which Grant of preexisting Permanent Variance 19-V-341 was, in part, based.

E. Decision and Order:

1. Application for Modification of Permanent Variance, No. 19-V-341M1, is conditionally GRANTED, as specified below, such that a total of one (1) elevators are the subject of Permanent Variance No. 19-V-341, as hereby modified.
2. Permanent Variance No. 19-V-341, being only modified as to the subject quantity of elevators specified in above Decision and Order Section 1, is otherwise unchanged and

remaining in full force and effect, as hereby incorporated by reference into Modification of Permanent Variance No. 19-V-341M1.

3. The applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way that the Applicant was required to notify them of the application for permanent variance, per sections 411.2 and 411.3.
4. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division, or by the Board on its own motion, in the manner prescribed for its issuance.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021


Autumn Gonzalez, Hearing Officer

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application to Modify)
Permanent Variance by:)
)
Anton Milpitas 730, LLC)
)
_____)

OSHSB FILE No. 19-V-403M1
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application to Modify Permanent Variance by: <p style="text-align: center;">Anton Milpitas 730, LLC</p>	OSHSB File No.: 19-V-403M1 <p style="text-align: center;"><u>PROPOSED DECISION</u></p> Hearing Date: April 21, 2021
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A. The following person or entity (“Applicant”) has applied for a modification of permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, for each elevator having the specified preexisting variance location address of record:

Preexisting OSHSB File No.	Applicant Name	Preexisting Variance Address of Record
19-V-403	Anton Milpitas 730, LLC	730 E. Capitol Ave. Milpitas, CA

B. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.

C. Procedural Matters:

1. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Dan Leacox of Leacox & Associates, appeared on behalf of the Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff in a technical advisory role apart from the Board.
3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: the subject modification of permanent variance application captioned above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application(s) for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s rulemaking records and variance decisions concerning the safety order provisions from which variance has been requested. On April 21, 2021, the

¹ Unless otherwise noted all references are to California Code of Regulations, title 8.

hearing and record closed, and the matter was taken under submission by the Hearing Officer.

D. Based on the record of this hearing, the Board makes the following findings of fact:

1. The Applicant requests modification of the address of the unchanging variance location specified within Board records for each elevator the subject of previously granted Permanent Variance 19-V-403.
2. Application Section 3, declared to be wholly truthful under penalty of perjury by Application signatory, states facts upon which reasonably may be based a finding that the address, specified in the records of the Board, at which Permanent Variance 19-V-403 is in effect, in fact is more completely, and correctly the different address information specified in below subsection D.5.
3. The Division has evaluated the request for modification of variance location address, finds no issue with it, and recommends that the application for modification be granted subject to the same conditions of the Decision and Order in OSHSB Permanent Variance File No. 19-V-403.
4. The Board finds the above subpart D.2 referenced declaration to be credible, uncontroverted, and consistent with available, sufficient facts, and of no bearing as to the finding of equivalent occupational health and safety upon which Grant of preexisting Permanent Variance 19-V-403 was, in part, based.
5. The Board finds the correct address by which to designate the location of each elevator the subject of Permanent Variance No. 19-V-403, to be:

1821 S. Milpitas Blvd.
Milpitas, CA

E. Decision and Order:

1. Permanent Variance Application No. 19-V-403M1 is conditionally GRANTED, thereby modifying Board records, such that, without change in variance location, each elevator being the subject of Permanent Variance Nos. 19-V-403, and 19-V-403M1, shall have the following address designation:


1821 S. Milpitas Blvd.
Milpitas, CA

Proposed Variance Decision
OSHSB File No. 19-V-403M1
Hearing Date: April 21, 2021

2. Permanent Variance No. 19-V-403, being only modified as to the subject location address specified in above Decision and Order Section 1, is otherwise unchanged and remaining in full force and effect, as hereby incorporated by reference into this Decision and Order of Permanent Variance No. 19-V-403M1.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for)
Permanent Variance by:)
)
740 Alvarado JV, LLC)
)
)
)
)
_____)

OSHSB FILE No. 20-V-195
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p style="text-align: center;">740 Alvarado JV, LLC</p>	<p>OSHSB File No.: 20-V-195</p> <p style="text-align: center;"><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
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Jurisdictional and Procedural Matters

- Each below listed applicant (“Applicant”) has applied for permanent variance from certain provisions of the Elevator Safety Orders, found at title 8, of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
20-V-195	740 Alvarado JV, LLC	740 S. Alvarado St. Los Angeles, CA	1

- This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq. of the Board’s procedural regulations.
- This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
- At the hearing, Jennifer Linares, with the Schindler Elevator Company, appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”), and Michael Nelmidia appeared on behalf of Board staff, in a technical advisory role apart from the Board.
- Oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: each respective permanent variance applications per table above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application Memorandum as PD-3, Division Review of Application as PD-4, Review Draft 1 Proposed

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

Decision as PD-5, and official notice taken of the Board's rulemaking records, and variance decisions concerning the safety order requirements from which variance is requested. At close of hearing on April 21, 2021, the record was closed, and the matter taken under submission by the Hearing Officer.

Relevant Safety Order Provisions

Applicant seeks a permanent variance from section 3141 [ASME A17.1-2004, sections 2.20.1, 2.20.2.1, 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.3.4, 2.20.9.5.4, 2.26.1.4.4(a), 8.4.10.1.1(a)(2)(b), 2.14.1.7.1, 2.18.7.4, and 2.26.9.6.1] of the Elevator Safety Orders, with respect to the suspension ropes and connections, inspection transfer switch relocation, seismic reset switch relocation, the location and construction of car-top railings, governor-sheave diameter, and means of removing power from the driving machine motor for one (1) Schindler model 3300 MRL elevator.

The relevant language of those sections are below.

1. Suspension Means

Section 3141 [ASME A17.1-2004, section 2.20.1, Suspension Means] states in part:

Elevator cars shall be suspended by steel wire ropes attached to the car frame or passing around sheaves attached to the car frame specified in 2.15.1. Ropes that have previously been installed and used on another installation shall not be reused. Only iron (low-carbon steel) or steel wire ropes, having the commercial classification "Elevator Wire Rope," or wire rope specifically constructed for elevator use, shall be used for the suspension of elevator cars and for the suspension of counterweights. The wire material for ropes shall be manufactured by the open-hearth or electric furnace process, or their equivalent.

Section 3141 [ASME A17.1-2004, section 2.20.2.1(b), On Crosshead Data Plate] states in part:

The crosshead data plate required by 2.16.3 shall bear the following wire-rope data:

(b) the diameter in millimeters (mm) or inches (in.)

Section 3141 [ASME A17.1-2004, section 2.20.2.2(a) and (f) On Rope Data Tag] states in part:

A metal data tag shall be securely attached to one of the wire-rope fastenings. This data tag shall bear the following wire-rope data:

- (a) the diameter in millimeters (mm) or inches (in.)
[...]
- (f) whether the ropes were non preformed or preformed

Section 3141 [ASME A17.1-2004, section 2.20.3, Factor of Safety] states:

The factor of safety of the suspension wire ropes shall be not less than shown in Table 2.20.3. Figure 8.2.7 gives the minimum factor of safety for intermediate rope speeds. The factor of safety shall be based on the actual rope speed corresponding to the rated speed of the car.

The factor of safety shall be calculated by the following formula:

$$f = \frac{S \times N}{W}$$

where:

N= number of runs of rope under load. For 2:1 roping, N shall be two times the number of ropes used, etc.

S= manufacturer's rated breaking strength of one rope

W= maximum static load imposed on all car ropes with the car and its rated load at any position in the hoistway

Section 3141 [ASME A17.1-2004, section 2.20.4, Minimum Number and Diameter of Suspension Ropes] states:

The minimum number of hoisting ropes used shall be three for traction elevators and two for drum-type elevators.

Where a car counterweight is used, the number of counterweight ropes used shall be not less than two.

The term "diameter," where used in reference to ropes, shall refer to the nominal diameter as given by the rope manufacturer.

The minimum diameter of hoisting and counterweight ropes shall be 9.5 mm (0.375 in.). Outer wires of the ropes shall be not less than 0.56 mm (0.024 in.) in diameter.

Section 3141 [ASME A17.1-2004, section 2.20.9.3.4] states:

Cast or forged steel rope sockets, shackle rods, and their connections shall be made of unwelded steel, having an elongation of not less than 20% in a gauge length of 50 mm (2 in.), when measured in accordance with ASTM E 8, and conforming to ASTM A 668, Class B for forged steel, and ASTM A 27, Grade 60/30 for cast steel, and shall be stress relieved. Steels of greater strength shall be permitted, provided they have an elongation of not less than 20% in a length of 50 mm (2 in.).

Section 3141 [ASME A17.1-2004, section 2.20.9.5.4] states:

When the rope has been seated in the wedge socket by the load on the rope, the wedge shall be visible, and at least two wire-rope retaining clips shall be provided to attach the termination side to the load-carrying side of the rope (see Fig. 2.20.9.5). The first clip shall be placed a maximum of 4 times the rope diameter above the socket, and the second clip shall be located within 8 times the rope diameter above the first clip. The purpose of the two clips is to retain the wedge and prevent the rope from slipping in the socket should the load on the rope be removed for any reason. The clips shall be designed and installed so that they do not distort or damage the rope in any manner.

2. Requested Transfer Switch Placement Variance

As it pertains to installation of the requisite transfer switch within a “machine room” location incompatible with machine-room-less design of the Schindler Model 3300 elevator, the Applicant presently seeks permanent variance from the following Elevator Safety Order incorporated ASME Code A17.1-2004, subsection:

Subsection 2.26.1.4.4(a)--Transfer Switch Placement in Machine Room

Section 3141[ASME A17.1-2004, section 2.26.1.4.4(a), Machine Room Inspection Operation] states:

When machine room inspection operation is provided, it shall conform to 2.26.1.4.1, and the transfer switch shall be

(a) located in the machine room[.]

3. Requested Seismic Reset Switch Placement Variance

As it pertains to installation of the requisite seismic reset switch within a “machine room” location incompatible with machine-room-less design of the Schindler Model 3300 elevator, the Applicant presently seeks permanent variance from the following Elevator Safety Order incorporated ASME Code subsection:

Subsection 8.4.10.1.1(a)(2)(b)--Seismic Reset Switch Placement in Machine Room

Section 3141[ASME A17.1-2004, section 8.4.10.1.1(a)(2)(b), Earthquake Equipment] states:

(a) All traction elevators operating at a rated speed of 0.75 m/s (150 ft/min) or more and having counterweights located in the same hoistway shall be provided with the following:

(1) seismic zone 3 or greater: a minimum of one seismic switch per building

(2) seismic zone 2 or greater:

(a) a displacement switch for each elevator

(b) an identified momentary reset button or switch for each elevator, located in the control panel in the elevator machine room

4. Requested Car Top Railing Inset Variance

As it pertains to top of car railing placement requiring space occupied by upper hoistway mounted elevator machinery characteristic of the Schindler Model 3300 elevator, the Applicant presently seeks permanent variance from the following Elevator Safety Order incorporated ASME Code A17.1-2004, section:

Section 2.14.1.7.1—Top of Car Perimeter Railing Placement

Section 3141[ASME A17.1-2004, section 2.14.1.7.1] states:

A standard railing conforming to 2.10.2 shall be provided on the outside perimeter of the car top on all sides where the perpendicular distance between the edges of the car top and the adjacent hoistway enclosure exceeds 300 mm (12 in.) horizontal clearance.

5. Pitch Diameter of Governor Sheaves

Section 3141 [ASME A17.1-2004, Section 2.18.7.4] states:

“The pitch diameter of governor sheaves and governor tension sheaves shall be not less than the product of the diameter of the rope and the applicable multiplier listed in Table 2.18.7.4, based on the rated speed and the number of strands in the rope.”

Table 2.18.7.4 Multiplier for Determining Governor Sheave Pitch Diameter
[from ASME A17.1-2004]

Rated Speed m/s (ft./min)	Number of Strands	Multiplier
1.00 or less (200 or less)	6	42
1.00 or less (200 or less)	8	30
Over 1.0 (over 200)	6	46
Over 1.0 (over 200)	8	32

6. SIL-Rated System to Inhibit Current Flow to AC Drive Motor

Section 3141[ASME A17.1-2004, section 2.26.9.6.1] states:

Two separate means shall be provided to independently inhibit the flow of alternating current through the solid state devices that connect the direct current power source to the alternating-current driving motor. At least one of the means shall be an electromechanical relay.

Findings of Fact

Based on the record of this proceeding, the Board finds the following:

1. Applicant intends to utilize Schindler model 3300 MRL elevator cars at the locations listed in Jurisdictional and Procedural Matters, section 1.
2. The installation contract for these elevator was or will be signed on or after May 1, 2008, thus making the elevator subject to the Group IV Elevator Safety Orders.
3. The Schindler model 3300 MRL elevator cars are not supported by circular steel wire ropes, as required by the Elevator Safety Orders. They utilize non-circular elastomeric-coated steel belts and specialized suspension means fastenings.
4. No machine room is provided, preventing the inspection transfer switch from being located in the elevator machine room. The lack of machine room also prevents the seismic reset switch from being located in the elevator machine room.
5. Applicant proposes to relocate the inspection transfer switch and seismic reset switch in an alternative enclosure.

Proposed Variance Decision

OSHSB Variance File No. 20-V-195

Hearing Date: April 21, 2021

6. Due to the use of a 6 mm (0.25 in.) governor rope with 6-strand construction, the provided governor sheave pitch diameter is less than that required by the Elevator Safety Orders.
7. The driving machine and governor are positioned in the hoistway and restrict the required overhead clearance to the elevator car top.
8. Applicant proposes to insert the car-top railings at the perimeter of the car top.
9. Applicant intends to use an elevator control system, model CO NX100NA, with a standalone, solid-state motor control drive system that includes devices and circuits having a Safety Integrity Level (SIL) rating to execute specific elevator safety functions.

Conclusive Findings:

The above-stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted; and (2) a preponderance of the evidence establishes that Applicant's proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of the Elevator Safety Orders from which variance is being sought.

Decision and Order:

The Application being the subject of this proceeding, per the table in Jurisdictional and Procedural Matters, section 1 above, is conditionally GRANTED, to the extent that the Applicant shall be issued permanent variance from section 3141 subject to the following conditions and limitations:

Elevator Safety Orders:

- Suspension Means: 2.20.1, 2.20.2.1, 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.3.4, and 2.20.9.5.4 (Only to the extent necessary to permit the use of the Elastomeric-coated Steel Belts proposed by the Applicant, in lieu of circular steel suspension ropes.);
- Inspection transfer switch: 2.26.1.4.4(a) (Only to the extent necessary to permit the inspection transfer switch to reside at a location other than the machine room);
- Seismic reset switch: 8.4.10.1.1(a)(2)(b) (Only to the extent necessary to permit the seismic reset switch to reside at a location other than the machine room. room);

Proposed Variance Decision

OSHSB Variance File No. 20-V-195

Hearing Date: April 21, 2021

- Car-Top Railing: 2.14.1.7.1 (Only to the extent necessary to permit the use of the car-top railing system proposed by the Applicant, where the railing system is located inset from the elevator car top perimeter);
- Governor Rope and Sheave: The Applicant shall conditionally hold permanent variance from certain requirements of the following Title 8, Section 3141, incorporated section of ASME A17.1-2004, to the limited extent variance is necessary to allow for the below specified governor rope and governor sheave parameters: Section 2.18.7.4.
- Means of Removing Power: 2.26.9.6.1 (Only to the extent necessary to permit the use of SIL-rated devices and circuits as a means to remove power from the AC driving motor, where the redundant monitoring of electrical protective devices is required by the Elevator Safety Orders).

Conditions:

1. The elevator suspension system shall comply to the following:

The suspension traction media (STM) members and their associated fastenings shall conform to the applicable requirements of ASME A17.1-2013, sections:

2.20.4.3 – Minimum Number of Suspension Members

2.20.3 – Factor of Safety

2.20.9 – Suspension Member Fastening

- a. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the installation, maintenance, inspection and testing of the STM members, fastenings, related monitoring and detection systems, and criteria for STM replacement. The Applicant shall make those procedures and criteria available to the Certified Competent Conveyance Mechanic (CCCM) at the location of the elevator, and to the Division upon request.

STM member mandatory replacement criteria shall include:

- i. Any exposed wire, strand or cord;
 - ii. Any wire, strand or cord breaks through the elastomeric coating;
 - iii. Any evidence of rouging (steel tension element corrosion) on any part of the elastomeric-coated steel suspension member;
 - iv. Any deformation in the elastomeric suspension member such as, but not limited to, kinks or bends;
- b. Traction drive sheaves must have a minimum diameter of 72 mm. The maximum speed of STM members running on 72 mm, 87 mm and 125 mm drive sheaves shall be no greater than 2.5 m/s, 6.0 m/s and 8.0 m/s respectively.

Proposed Variance Decision

OSHSB Variance File No. 20-V-195

Hearing Date: April 21, 2021

- c. If any one STM member needs replacement, the complete set of suspension members on the elevator shall be replaced. Exception: if a new suspension member is damaged during installation, and prior to any contemporaneously installed STM having been placed into service, it is permissible to replace the individual damaged suspension member. STM members that have been installed on another installation shall not be re-used.
- d. A traction loss detection means shall be provided that conforms to the requirements of ASME A17.1-2013, section 2.20.8.1. The means shall be tested for correct function annually in accordance with ASME A17.1-2013, section 8.6.4.19.12.
- e. A broken suspension member detection means shall be provided that conforms to the requirements of ASME A17.1-2013, section 2.20.8.2. The means shall be tested for correct function annually in accordance with ASME A17.1-2013, section 8.6.4.19.13(a).
- f. An elevator controller integrated bend cycle monitoring system shall monitor actual STM bend cycles, by means of continuously counting, and storing in nonvolatile memory, the number of trips that the STM makes traveling, and thereby being bent, over the elevator sheaves. The bend cycle limit monitoring means shall automatically stop the car normally at the next available landing before the bend cycle correlated residual strength of any single STM member drops below 80 percent of full rated strength. The monitoring means shall prevent the car from restarting. The bend cycle monitoring system shall be tested annually in accordance with the procedures required by condition 1b above.
- g. The elevator shall be provided with a device to monitor the remaining residual strength of each STM member. The device shall conform to the requirements of Division Circular Letter E-10-04, a copy of which is attached hereto as Exhibit 1 and incorporated herein by reference.
- h. The elevator crosshead data plate shall comply with the requirements of ASME A17.1-2013, section 2.20.2.1.
- i. A suspension means data tag shall be provided that complies with the requirements of ASME A17.1-2013, section 2.20.2.2.
- j. Comprehensive visual inspections of the entire length of each and all installed suspension members, to the criteria developed in condition 1b, shall be conducted and documented every six months by a CCCM.
- k. The Applicant shall be subject to the requirements set out in Exhibit 2 of this Decision and Order, "Suspension Means Replacement Reporting Condition," Incorporated herein by this reference.

Proposed Variance Decision

OSHSB Variance File No. 20-V-195

Hearing Date: April 21, 2021

- I. Records of all tests and inspections shall be maintenance records subject to ASME A17.1-2004, sections 8.6.1.2 and 8.6.1.4, respectively.
2. If the inspection transfer switch required by ASME A17.1-2004, section 2.26.1.4.4 does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the control/machinery room/space containing the elevator's control equipment in an enclosure secured by a lock openable by a Group 1 security key. The enclosure is to remain locked at all times when not in use.
3. If the seismic reset switch does not reside in the machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the control/machinery room/space containing the elevator's control equipment in an enclosure secured by a lock openable by a Group 1 security key. The enclosure is to remain locked at all times when not in use.
4. If there is an inset car-top railing:
 - a. Serviceable equipment shall be positioned so that mechanics and inspectors do not have to climb on the railings to perform adjustments, maintenance, repairs or inspections. The Applicant shall not permit anyone to stand or climb over the car-top railing.
 - b. The distance that the railing can be inset shall be limited to not more than 6 inches.
 - c. All exposed areas of the car top outside the car-top railing where the distance from the railing to the edge of the car top exceeds 2 inches, shall be beveled with metal, at an angle of not less than 75 degrees with the horizontal, from the mid or top rail to the outside of the car top, such that no person or object can stand, sit, kneel, rest, or be placed in the exposed areas.
 - d. The top of the beveled area and/or car top outside the railing shall be clearly marked. The markings shall consist of alternating 4-inch diagonal red and white stripes.
 - e. The applicant shall provide durable signs with lettering not less than 1/2 inch on a contrasting background on each inset railing. Each sign shall state:

**CAUTION
STAY INSIDE RAILING
NO LEANING BEYOND RAILING
NO STEPPING ON, OR BEYOND, RAILING**

- f. The Group IV requirements for car-top clearances shall be maintained (car-top clearances outside the railing will be measured from the car top and not from the required bevel).

5. The SIL-rated devices and circuits used to inhibit electrical current flow in accordance with ASME A17.1-2004, section 2.26.9.6.1 shall comply with the following:
 - a. The SIL-rated devices and circuits shall consist of a Variodyn SIL-3 rated Regenerative, Variable Voltage Variable Frequency (VVVF) motor drive unit, model VAF013 or VAF023, labeled or marked with the SIL rating (not less than SIL 3), the name or mark of the certifying organization, and the SIL certification number (968/FSP 1556.00), and followed by the applicable revision number (as in 968/FSP 1556.00/19).
 - b. The devices and circuits shall be certified for compliance with the applicable requirements of ASME A17.1-2013, section 2.26.4.3.2.
 - c. The access door or cover of the enclosures containing the SIL-rated components shall be clearly labeled or tagged on their exterior with the statement:

**Assembly contains SIL-rated devices.
Refer to Maintenance Control Program and
wiring diagrams prior to performing work.**

- d. Unique maintenance procedures or methods required for the inspection, testing, or replacement of the SIL-rated circuits shall be developed and a copy maintained in the elevator machine/control room/space. The procedures or methods shall include clear color photographs of each SIL-rated component, with notations identifying parts and locations.
- e. Wiring diagrams that include part identification, SIL, and certification information shall be maintained in the elevator machine/control room/space.
- f. A successful test of the SIL-rated devices and circuits shall be conducted initially and not less than annually in accordance with the testing procedure. The test shall demonstrate that SIL-rated devices, safety functions, and related circuits operate as intended.
- g. Any alterations to the SIL-rated devices and circuits shall be made in compliance with the Elevator Safety Orders. If the Elevator Safety Orders do not contain specific provisions for the alteration of SIL-rated devices, the alterations shall be made in conformance with ASME A17.1-2013, section 8.7.1.9.
- h. Any replacement of the SIL-rated devices and circuits shall be made in compliance with the Elevator Safety Orders. If the Elevator Safety Orders do not contain specific provisions for the replacement of SIL-rated devices, the replacement shall be made in conformance with ASME A17.1-2013, section 8.6.3.14.

Proposed Variance Decision

OSHSB Variance File No. 20-V-195

Hearing Date: April 21, 2021

- i. Any repairs to the SIL-rated devices and circuits shall be made in compliance with the Elevator Safety Orders. If the Elevator Safety Orders do not contain specific provisions for the repair of SIL-rated devices, the repairs shall be made in conformance with ASME A17.1-2013, section 8.6.2.6.
 - j. Any space containing SIL-rated devices and circuits shall be maintained within the temperature and humidity range specified by Schindler Elevator Corporation. The temperature and humidity range shall be posted on each enclosure containing SIL-rated devices and circuits.
 - k. Field changes to the SIL-rated system are not permitted. Any changes to the SIL-rated system's devices and circuitry will require recertification and all necessary updates to the documentation and diagrams required by conditions d. and e. above.
6. The speed governor rope and sheaves shall comply with the following:
 - a. The governor shall be used in conjunction with a steel 6 mm (0.25 in.) diameter governor rope with 6-strand, regular lay construction.
 - b. The governor rope shall have a factor of safety of 8 or greater as related to the strength necessary to activate the safety.
 - c. The governor sheaves shall have a pitch diameter of not less than 200 mm (7.87 in.).
 7. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division, and all applicable requirements met, including conditions of this permanent variance, prior to a Permit to Operate the elevator being issued. The elevator shall not be placed in service prior to the Permit to Operate being issued by Division.
 8. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way that the Applicant was required to notify them of the docketed application for permanent variance per sections 411.2 and 411.3.
 9. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in the procedural manner prescribed per the Board's procedural regulations.

Proposed Variance Decision
OSHSB Variance File No. 20-V-195
Hearing Date: April 21, 2021

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

DATED: April 21, 2021



Autumn Gonzalez, Hearing Officer

EXHIBIT 1

October 6, 2010

CIRCULAR LETTER E-10-04

TO: Installers, Manufacturers of Conveyances and Related Equipment and Other Interested Parties

SUBJECT: Coated Steel Belt Monitoring

The Elevator Safety Orders require routine inspection of the suspension means of an elevator to assure its safe operation.

The California Labor Code Section 7318 allows the Division to promulgate special safety orders in the absence of regulation.

As it is not possible to see the steel cable suspension means of a Coated Steel Belt, a monitoring device which has been accepted by the Division is required on all Coated Steel Belts which will automatically stop the car if the residual strength of any belt drops below 60%. The Device shall prevent the elevator from restarting after a normal stop at a landing.

The monitoring device must be properly installed and functional. A functioning device may be removed only after a determination has been made that the residual strength of each belt exceeds 60%. These findings and the date of removal are to be conspicuously documented in the elevator machine room. The removed device must be replaced or returned to proper service within 30 days.

If upon routine inspection, the monitoring device is found to be in a non-functional state, the date and findings are to be conspicuously documented in the elevator machine room.

If upon inspection by the Division, the monitoring device is found to be non-functional or removed, and the required documentation is not in place, the elevator will be removed from service.

If the device is removed to facilitate belt replacement, it must be properly installed and functional before the elevator is returned to service.

A successful test of the device's functionality shall be conducted once a year.

This circular does not preempt the Division from adopting regulations in the future, which may address the monitoring of Coated Steel Belts or any other suspension means.

This circular does not create an obligation on the part of the Division to permit new conveyances utilizing Coated Steel Belts.

Debra Tudor
Principal Engineer
DOSH-Elevator Unit HQS

EXHIBIT 2

Suspension Means – Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings. Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Pl., Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.
 - f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
 - g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.

Proposed Variance Decision

OSHSB Variance File No. 20-V-195

Hearing Date: April 21, 2021

- h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in item 2a above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application to Modify)
Permanent Variance by:)
)
Los Angeles World Airports)
)
_____)

OSHSB FILE No. 20-V-255M1
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application to Modify Permanent Variance by: <p style="text-align: center;">Los Angeles World Airports</p>	OSHSB File No.: 20-V-255M1 <p style="text-align: center;"><u>PROPOSED DECISION</u></p> Hearing Date: April 21, 2021
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A. The following person or entity (“Applicant”) has applied for a modification of permanent variance from provisions of the Conveyance Safety Orders, found at title 8 of the California Code of Regulations¹, for each conveyance having the specified preexisting variance location address of record:

Preexisting OSHSB File No.	Applicant Name	Preexisting Variance Address of Record
20-V-255	Los Angeles World Airports	LAWA Midfield Satellite Concourse North 384 World Way Los Angeles, CA

B. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.

C. Procedural Matters:

1. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Dan Leacox of Leacox & Associates, appeared on behalf of the Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff in a technical advisory role apart from the Board.
3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: the subject modification of permanent variance application captioned above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application(s) for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, Review Draft 1 Proposed Decision as PD-5, and official

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

notice taken of the Board's rulemaking records and variance decisions concerning the safety order provisions from which variance has been requested. On April 21, 2021, the hearing and record closed, and the matter was taken under submission by the Hearing Officer.

D. Based on the record of this hearing, the Board makes the following findings of fact:

1. The Applicant requests modification of the address of the unchanging variance location specified within Board records for each conveyance the subject of previously granted Permanent Variance 20-V-255.
2. Application Section 3, declared to be wholly truthful under penalty of perjury by Application signatory, states facts upon which reasonably may be based a finding that the address, specified in the records of the Board, at which Permanent Variance 20-V-255 is in effect, in fact is more completely, and correctly the different address information specified in below subsection D.5.
3. The Division has evaluated the request for modification of variance location address, finds no issue with it, and recommends that the application for modification be granted subject to the same conditions of the Decision and Order in OSHSB Permanent Variance File No. 20-V-255.
4. The Board finds the above subpart D.2 referenced declaration to be credible, uncontroverted, and consistent with available, sufficient facts, and of no bearing as to the finding of equivalent occupational health and safety upon which Grant of preexisting Permanent Variance 20-V-255 was, in part, based.
5. The Board finds the correct address by which to designate the location of each conveyance the subject of Permanent Variance No. 20-V-255 (see Appendix 1), to be:

LAWA Midfield Satellite
Concourse North
380 World Way (5 Units)
384 World Way (29 Units)
Los Angeles, CA

E. Decision and Order:

1. Permanent Variance Application No. 20-V-255M1 is conditionally GRANTED, thereby modifying Board records, such that, without change in variance location, each conveyance being the subject of Permanent Variance Nos. 20-V-255, and 20-V-255M1 (see Appendix 1), shall have the following address designation:


Proposed Variance Decision
OSHSB File No. 20-V-255M1
Hearing Date: April 21, 2021

LAWA Midfield Satellite
Concourse North
380 World Way (5 Units)
384 World Way (29 Units)
Los Angeles, CA

2. Permanent Variance No. 20-V-255, being only modified as to the subject location address specified in above Decision and Order Section 1, is otherwise unchanged and remaining in full force and effect, as hereby incorporated by reference into this Decision and Order of Permanent Variance No. 20-V-255M1.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

Appendix 1

LAWA Midfield Satellite Concourse North, 380 World Way

Escalator Unit Identifications

GTW-G1-ES01	GTW-G1-ES02	GTW-G1-ES03	GTW-G1-ES04	GTW-G1-ES05
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LAWA Midfield Satellite Concourse North, 384 World Way

Escalator Unit Identifications

MSC-C1-ES01	MSC-C2-ES04	MSC-C4-ES01	MSC-N4-ES01	MSC-N7-ES03
MSC-C1-ES02	MSC-C2-ES05	MSC-C4-ES02	MSC-N4-ES02	
MSC-C1-ES03		MSC-C4-ES03		MSC-N8-ES01
MSC-C1-ES04	MSC-C3-ES01	MSC-C4-ES04	MSC-N5-ES01	MSC-N8-ES02
	MSC-C3-ES02		MSC-N5-ES02	
MSC-C2-ES01	MSC-C3-ES03	MSC-N2-ES01		MSC-S2-ES01
MSC-C2-ES02	MSC-C3-ES04	MSC-N2-ES02	MSC-N7-ES01	
MSC-C2-ES03			MSC-N7-ES02	

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application to Modify)
Permanent Variance by:)
)
Alameda Block 9 LP)
)
_____)

OSHSB FILE No. 20-V-304M1
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application to Modify Permanent Variance by: <p style="text-align: center;">Alameda Block 9 LP</p>	OSHSB File No.: 20-V-304M1 <p style="text-align: center;"><u>PROPOSED DECISION</u></p> Hearing Date: April 21, 2021
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A. The following person or entity (“Applicant”) has applied for a modification of permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, for each elevator having the specified preexisting variance location address of record:

Preexisting OSHSB File No.	Applicant Name	Preexisting Variance Address of Record
20-V-304	Alameda Block 9 LP	201 W. Atlantic Ave. Alameda, CA

B. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq. of the Board’s procedural regulations.

C. Procedural Matters:

1. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Jennifer Linares, appeared on behalf of the Applicant’s representative, the Schindler Elevator Company; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff, in a technical advisory role apart from the Board.
3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: the subject modification of permanent variance application captioned above as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application(s) for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s files, records, recordings and decisions concerning the

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

Elevator Safety Order requirements from which variance shall issue. On April 21, 2021, the hearing and record closed, and the matter was taken under submission by the Hearing Officer.

D. Based on the record of this hearing, the Board makes the following findings of fact:

1. The Applicant requests modification of the address of the unchanging variance location specified within Board records for each elevator the subject of previously granted Permanent Variance 20-V-304.
2. Application Section 3, declared to be wholly truthful under penalty of perjury by Application signatory, states facts upon which reasonably may be based a finding that the address, specified in the records of the Board, at which Permanent Variance 20-V-304 is in effect, in fact is more completely, and correctly the different combination of addresses specified in below subsection D.5.
3. The Division has evaluated the request for modification of variance location address, finds no issue with it, and recommends that the application for modification be granted subject to the same conditions of the Decision and Order in OSHSB Permanent Variance File No. 20-V-304.
4. The Board finds the above subpart D.2 referenced declaration to be credible, uncontroverted, and consistent with available, sufficient facts, and of no bearing as to the finding of equivalent occupational health and safety upon which Grant of preexisting Permanent Variance 20-V-304 was, in part, based.
5. The Board finds the correct address by which to designate the location of each elevator the subject of Permanent Variance No. 20-V-304, to be:

2000 Ardent Way
Alameda, CA

E. Decision and Order:

1. Permanent Variance Application No. 20-V-304M1 is conditionally GRANTED, thereby modifying Board records, such that, without change in variance location, each elevator

Proposed Variance Decision
OSHSB File No. 20-V-304M1
Hearing Date: April 21, 2021

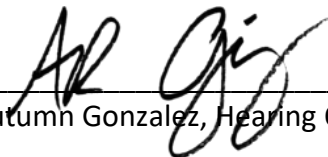
being the subject of Permanent Variance Nos. 20-V-304, and 20-V-304M1, shall have the following address designation:

2000 Ardent Way
Alameda, CA

2. Permanent Variance No. 20-V-304, being only modified as to the subject location address specified in above Decision and Order Section 1, is otherwise unchanged and remaining in full force and effect, as hereby incorporated by reference into this Decision and Order of Permanent Variance No. 20-V-304M1.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021


Autumn Gonzalez, Hearing Officer

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
Otis Elevator (Group IV) Gen 2(O) and/or)
Gen 2L Alterations)
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p style="text-align: center;">Otis Elevator (Group IV) Gen2(O) and/or Gen2L Alterations</p>	<p>OSHSB File Nos.: Per Section A.1 table</p> <p style="text-align: center;"><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
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A. Subject Matter:

- Each below listed applicant (“Applicant”) has applied for permanent variances from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, or applied to modify such variances, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
20-V-446	Douglas Emmett 2015 LLC	9601 Wilshire Blvd Los Angeles, CA	5

- The subject regulatory requirements are as enumerated per the below Decision and Order.

B. Jurisdiction:

This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.

C. Procedural:

- This hearing was held on April 21, 2021, in Sacramento, California, and via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
- At the hearing, Dan Leacox of Leacox & Associates, appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of

¹ Unless otherwise noted, all references are to title 8, California Code of Regulations.

Proposed Variance Decision

Otis Elevator, Group IV, Gen2(O) and/or Gen2L Alterations

Hearing date: April 21, 2021

Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff in a technical advisory role apart from the Board.

3. Oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: each permanent variance application per Section A.1 table as Exhibit PD-1; Notice of Hearing as Exhibit PD-2; each respective Board staff Pending Application Memorandum as PD-3; Division evaluation as PD-4; Review Draft 1 Proposed Decision as PD-5; and official notice taken of the Board’s rulemaking records and variance decisions concerning the safety order requirements from which variance is requested. At close of hearing on April 21, 2021, the record closed, and the matter was taken under submission by the Hearing Officer.

D. Findings and Basis:

1. Each Applicant intends to alter elevators at the locations, and in the numbers, stated in the Section A.1 table such that each elevator becomes (or incorporates features of) an Otis Gen2(O) and/or Otis Gen2L elevator.
2. The belts and connections that each Applicant intends to install are the same as are used on new Otis Gen2(O)/Gen2L installations.
3. The alterations will be performed after May 1, 2008, and the contracts for the alterations were or will be signed on or after May 1, 2008, making those alterations subject to the Group IV Elevator Safety Orders.
4. The Board incorporates by reference the findings stated in: (a) Items 3 through 5.c, 5.e, and 5.f of the “Findings of Fact” section of the Proposed Decision adopted by the Board on February 19, 2009, regarding OSHSB File No. 08-V-247; (b) Item D.3 of the Proposed Decision adopted by the Board on July 16, 2009, regarding OSHSB File No. 09-V-042; (c) Item D.4 of the Proposed Decision adopted by the Board on September 16, 2010, regarding OSHSB File No. 10-V-029; and (d) Items D.4, D.5, and D.7 of the proposed decision adopted by the Board on July 18, 2013, regarding OSHSB File No. 12-V-146.

E. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted, and (2) a preponderance of the evidence establishes that each Applicants proposal, subject to all conditions and limitations set forth

Proposed Variance Decision

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Hearing date: April 21, 2021

in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of the Elevator Safety Orders from which variance is being sought.

F. Decision and Order:

Each permanent variance application that is the subject of this proceeding is conditionally GRANTED, as specified below, to the extent that, as of the date the Board adopts this Proposed Decision, each Section A.1 table listed Applicant, at the specified variance location, and as to specified number of conveyances, shall have a permanent variance regarding switches, suspension rope and connection retrofits, (so long as the elevators are Gen2 (O) or Gen2L Group IV devices that are designed, equipped, and installed in accordance with, and are otherwise consistent with, the representations made in the Otis Master File [referred to in previous Proposed Decisions as the "Gen2 Master File"] maintained by the Board, as that file was constituted at the time of this hearing). The variance shall be from California Code of Regulations, Title 8, Sections 3141 and 3141.2(a), and shall only be to the extent necessary to allow variances from the following provisions of ASME A17.1-2004 made applicable by those title 8 provisions:

- Sections 8.7.1.1(b), 8.7.2.21.1, and 8.7.2.25.1(c) (to the extent necessary to permit variance from the ASME A17.1-2004 provisions listed in the next bullet point);
- Sections 2.14.1.7.1 (only to the extent necessary to permit an inset car top railing, if, in fact, the car top railing is inset),
- 2.20.1, 2.20.2.1, 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.3.4, 2.20.9.5.4 (only to the extent necessary to permit the use of Otis Gen2 flat coated steel suspension belts [the belts proposed for use on these Gen2(O) and/or Gen2L elevators] in lieu of conventional steel suspension ropes),
- 2.26.1.4.4(a) (only to the extent necessary to allow the inspection transfer switch to reside at a location other than a machine room, if, in fact, it does not reside in the machine room) and
- 8.4.10.1.1(a)(2)(b) (only to the extent necessary to allow the seismic reset switch to reside at a location other than a machine room, if, in fact, it does not reside in the machine room)].

The variance shall be subject to, and limited by, the following additional conditions:

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Hearing date: April 21, 2021

1. Each elevator subject to this variance shall comply with all applicable Group IV Elevator Safety Orders and with all ASME provisions made applicable by those Group IV Elevator Safety Orders, except those from which variances are granted, as set forth in the prefatory portion of this Decision and Order.
2. The elevator suspension system shall comply with the following:
 - a. The coated steel belt shall have a factor of safety at least equal to the factor of safety that ASME A17.1-2004, Section 2.20.3 would require for wire ropes if the elevator were suspended by wire ropes rather than the coated steel belt.
 - b. Steel coated belts that have been installed and used on another installation shall not be reused.
 - c. The coated steel belt shall be fitted with a monitoring device which has been accepted by the Division and which will automatically stop the car if the residual strength of any single belt drops below 60 percent. If the residual strength of any single belt drops below 60 percent, the device shall prevent the elevator from restarting after a normal stop at a landing.
 - d. Upon initial inspection, the readings from the monitoring device shall be documented and submitted to the Division.
 - e. A successful test of the monitoring device's functionality shall be conducted at least once a year (the record of the annual test of the monitoring device shall be a maintenance record subject to ASME A17.1-2004, Section 8.6.1.4).
 - f. The coated steel belts used shall be accepted by the Division.
 - g. The installation of belts and connections shall be in conformance with the manufacturer's specifications, which shall be provided to the Division.
3. With respect to each elevator subject to this variance, the applicant shall comply with Division Circular Letter E-10-04, a copy of which is attached hereto as Addendum 1 and incorporated herein by this reference.
4. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the installation, maintenance, inspection, and testing of the belts and monitoring device, and criteria for belt replacement, and the Applicant shall make those procedures and criteria available to the Division upon request.

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5. The flat coated steel belts shall be provided with a metal data tag that is securely attached to one of those belts. This data tag shall bear the following flat steel coated belt data:
 - a. The width and thickness in millimeters or inches;
 - b. The manufacturer's rated breaking strength in (kN) or (lbf);
 - c. The name of the person who or organization that installed the flat coated steel belts;
 - d. The month and year the flat coated steel belts were installed;
 - e. The month and year the flat coated steel belts were first shortened;
 - f. The name or trademark of the manufacturer of the flat coated steel belts; and
 - g. Lubrication information.
6. There shall be a crosshead data plate of the sort required by Section 2.20.2.1, and that plate shall bear the following flat steel coated belt data:
 - a. The number of belts;
 - b. The belt width and thickness in millimeters or inches; and
 - c. The manufacturer's rated breaking strength per belt in (kN) or (lbf).
7. If the seismic reset switch does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the inspection and test control panel located in one upper floor hoistway door jamb or in the control space (outside the hoistway) used by the motion controller.
8. If the inspection transfer switch required by ASME A17.1, rule 2.26.1.4.4(a) does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the inspection and test control panel located in one upper floor hoistway door jamb or in the control space (outside the hoistway) used by the motion controller.
9. When the inspection and test control panel is located in the hoistway door jamb, the inspection and test control panels shall be openable only by use of a Security Group I restricted key.
10. The opening to the hoistway shall be effectively barricaded when car top inspection, maintenance, servicing, or testing of elevator equipment in the hoistway is required. If service personnel must leave the area for any reason, the hoistway and control room doors shall be closed.

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Hearing date: April 21, 2021

11. If there is an inset car top railing:

- a. Serviceable equipment shall be positioned so that mechanics and inspectors do not have to climb on railings to perform adjustment, maintenance, repairs, or inspections. The applicant shall not permit anyone to stand on or climb over the car top railing.
- b. The distance that the car top railing may be inset from the car top perimeter shall be limited to no more than 6 inches.
- c. All exposed areas of the car top outside the car top railing shall preclude standing or placing objects or persons which may fall and shall be beveled from the mid- or top rail to the outside of the car top.
- d. The top of the beveled area and/or the car top outside the railing shall be clearly marked. The markings shall consist of alternating 4 inch diagonal red and white stripes.
- e. The Applicant shall provide durable signs with lettering not less than ½ inch on a contrasting background on each inset railing; each sign shall state:

CAUTION

DO NOT STAND ON OR CLIMB OVER RAILING

- f. The Group IV requirements for car top clearances shall be maintained (car top clearances outside the railing shall be measured from the car top and not from the required bevel).
12. Each elevator shall be serviced, maintained, adjusted, tested, and inspected by Certified Competent Conveyance Mechanics who have been trained, and are competent, to perform those tasks on the Gen2(O) and/or Gen2L elevator system the Applicant proposes to use, in accordance with the written procedures and criteria required by Condition No. 4 and all other terms and conditions of this permanent variance.
13. Any Certified Qualified Conveyance Company performing inspections, maintenance, servicing, or testing of the elevators shall be provided a copy of this variance decision.
14. The Division shall be notified when the elevator is ready for inspection. No elevator shall be placed in service prior to it being inspected and issued a Permit to Operate by the Division

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15. Each Applicant shall be subject to the suspension means replacement reporting condition stated in Addendum 2; that condition is incorporated herein by this reference.
16. Each Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way that the Applicant was required to notify them of the application for permanent variance per sections 411.2 and 411.3.
17. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in accordance with the Board's procedural regulations.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

ADDENDUM 1

October 6, 2010

CIRCULAR LETTER E-10-04

TO: Installers, Manufacturers of Conveyances and Related Equipment and, Other Interested Parties

SUBJECT: Coated Steel Belt Monitoring

The Elevator Safety Orders require routine inspection of the suspension means of an elevator to assure its safe operation.

The California Labor Code Section 7318 allows the Division to promulgate special safety orders in the absence of regulation.

As it is not possible to see the steel cable suspension means of a Coated Steel Belt, a monitoring device which has been accepted by the Division is required on all Coated Steel Belts which will automatically stop the car if the residual strength of any belt drops below 60%. The Device shall prevent the elevator from restarting after a normal stop at a landing.

The monitoring device must be properly installed and functional. A functioning device may be removed only after a determination has been made that the residual strength of each belt exceeds 60%. These findings and the date of removal are to be conspicuously documented in the elevator machine room. The removed device must be replaced or returned to proper service within 30 days.

If upon routine inspection, the monitoring device is found to be in a non-functional state, the date and findings are to be conspicuously documented in the elevator machine room.

If upon inspection by the Division, the monitoring device is found to be non-functional or removed, and the required documentation is not in place, the elevator will be removed from service.

If the device is removed to facilitate belt replacement, it must be properly installed and functional before the elevator is returned to service.

A successful test of the device's functionality shall be conducted once a year.

This circular does not preempt the Division from adopting regulations in the future, which may address the monitoring of Coated Steel Belts or any other suspension means.

This circular does not create an obligation on the part of the Division to permit new conveyances utilizing Coated Steel Belts.

Debra Tudor
Principal Engineer
DOSH-Elevator Unit HQS

ADDENDUM 2

Suspension Means – Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings.

Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Place, Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.

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- f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
 - g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.
 - h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in item 2a above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
Otis Gen2(O) and/or Gen 2L Elevators)
(Group IV))
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p style="text-align: center;">Otis Gen2(O) and/or Gen2L Elevators (Group IV)</p>	<p>OSHSB File Nos.: Per Section A.1 table</p> <p style="text-align: center;"><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
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A. Subject Matter:

- Each applicant (“Applicant”) listed in the table below has applied for permanent variances from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
20-V-496	La Jolla Property Owner, LLC	3880 Nobel Drive San Diego, CA	5

- The safety orders at issue are stated in the portion of Section F that precedes the variance conditions.

B. Jurisdiction:

This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.

C. Procedural:

- This hearing was held on April 21, 2021, in Sacramento, California, and via teleconference, by Occupational Safety and Health Standards Board (“Board”) with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
- At the hearing, Dan Leacox of Leacox & Associates appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of

¹ Unless otherwise noted, all references are to title 8, California Code of Regulations.

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Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff.

3. Oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: each respective permanent variance applications per Section A.1 table as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application Memorandum as PD-3, Division Review of Application as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s rulemaking records and variance decisions concerning the safety order requirements at issue. At close of hearing on April 21, 2021, the record was closed, and the matter taken under submission by the Hearing Officer.

D. Findings:

1. Each Applicant intends to utilize Otis Gen2(O) and/or Otis Gen2L elevators at the location and in the numbers stated in the Section A.1 table (as used in this Proposed Decision, the term “Gen2(O)” refers to the original type of Gen2 elevator, as distinguished from other types with such designations as “Gen2L” or “Gen2S” or “Gen2 at 150”).
2. The installation contract for these elevators was, or will be, signed on or after May 1, 2008, making the elevators subject to the Group IV Elevator Safety Orders.
3. The Board incorporates by reference the findings stated in: (a) Items 3 through 5.c, 5.e, and 5.f of the “Findings of Fact” Section of the Proposed Decision adopted by the Board on February 19, 2009, regarding OSHSB File No. 08-V-247; (b) Item D.3 of the Proposed Decision adopted by the Board on July 16, 2009, regarding OSHSB File No. 09-V-042; (c) Item D.4 of the Proposed Decision adopted by the Board on September 16, 2010, regarding OSHSB File No. 10-V-029; (d) Items D.4, D.5, and D.7 of the Proposed Decision adopted by the Board on July 18, 2013 regarding OSHSB File No. 12-V-146; and (e) Items D.4 and D.5 of the Proposed Decision adopted by the Board on September 25, 2014, in OSHSB File No. 14-V-170.
4. Both Board staff and Division safety engineers, and Division, by way of written submissions to the record (Exhibits PD-3 and PD-4 respectively), and positions stated at hearing, are of the well informed opinion that grant of requested permanent variance, as limited and conditioned per the below Decision and Order will provide employment, places of employment, and subject conveyances, as safe and healthful as would prevail given non-variant conformity with the Elevator Safety Order requirements from which variance has been requested.

Proposed Variance Decision

Otis Gen2(O) and/or Gen2L Elevators (Group IV)

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E. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted; and (2) a preponderance of the evidence establishes that each Applicants proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of California Code of Regulation, Title 8, Elevator Safety Orders from which variance is being sought.

F. Decision and Order:

Each permanent variance application that is the subject of this proceeding is conditionally GRANTED, as below specified, and to the extent that, as of the date the Board adopts this Proposed Decision, each Applicant listed in the Section A.1 table of this Proposed Decision shall have a permanent variance from section 3141 [ASME A17.1-2004, Sections 2.14.1.7.1 (only to the extent necessary to permit an inset car top railing, if, in fact, the car top railing is inset), 2.20.1, 2.20.2.1(b), 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.3.4, 2.20.9.5.4, (only to the extent necessary to permit the use of Otis Gen2 flat coated steel suspension belts [the belts proposed for use on these Gen2(O) and/or Gen2L elevators] in lieu of conventional steel suspension ropes), 2.26.1.4.4(a) (only to the extent necessary to allow the inspection transfer switch to reside at a location other than a machine room, if, in fact, it does not reside in the machine room) and 8.4.10.1.1(a)(2)(b) (only to the extent necessary to allow the seismic reset switch to reside at a location other than a machine room, if, in fact, it does not reside in the machine room)], regarding car top railings, switches, and suspension ropes and connections, for the location and number of elevators listed in the Section A.1 table (so long as the elevators are Gen2(O) or Gen2L Group IV devices that are designed, equipped, and installed in accordance with, and are otherwise consistent with, the representations made in the Otis Master File [referred to in previous Proposed Decisions as the “Gen2 Master File”] maintained by the Board, as that file was constituted at the time of this hearing), subject to the following conditions:

The variance shall be subject to the following additional conditions:

1. Each elevator subject to this variance shall comply with all applicable Group IV Elevator Safety Orders and with all ASME provisions made applicable by those Group IV Elevator Safety Orders, except those from which variances are granted, as set forth in the prefatory portion of this Decision and Order.

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2. The suspension system shall comply with the following:
 - a. The coated steel belt shall have a factor of safety at least equal to the factor of safety that ASME A17.1-2004, Section 2.20.3, would require for wire ropes if the elevator were suspended by wire ropes rather than the coated steel belt.
 - b. Steel-coated belts that have been installed and used on another installation shall not be reused.
 - c. The coated steel belt shall be fitted with a monitoring device which has been accepted by the Division and which will automatically stop the car if the residual strength of any single belt drops below 60 percent. If the residual strength of any single belt drops below 60 percent, the device shall prevent the elevator from restarting after a normal stop at a landing.
 - d. Upon initial inspection, the readings from the monitoring device shall be documented and submitted to the Division.
 - e. A successful test of the monitoring device's functionality shall be conducted at least once a year (the record of the annual test of the monitoring device shall be a maintenance record subject to ASME A17.1-2004, Section 8.6.1.4).
 - f. The coated steel belts used shall be accepted by the Division.
 - g. The installation of belts and connections shall be in conformance with the manufacturer's specifications, which shall be provided to the Division.
3. With respect to each elevator subject to this variance, the applicant shall comply with Division Circular Letter E-10-04, a copy of which is attached hereto as Addendum 1 and incorporated herein by this reference.
4. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the installation, maintenance, inspection, and testing of the belts and monitoring device, and criteria for belt replacement, and shall make those procedures and criteria available to the Division upon request.
5. The flat coated steel belts shall be provided with a metal data tag that is securely attached to one of those belts. This data tag shall bear the following flat steel coated belt data:
 - a. The width and thickness in millimeters or inches;
 - b. The manufacturer's rated breaking strength in (kN) or (lbf);

Proposed Variance Decision

Otis Gen2(O) and/or Gen2L Elevators (Group IV)

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- c. The name of the person who, or organization that, installed the flat coated steel belts;
 - d. The month and year the flat coated steel belts were installed;
 - e. The month and year the flat coated steel belts were first shortened;
 - f. The name or trademark of the manufacturer of the flat coated steel belts;
 - g. Lubrication information.
6. There shall be a crosshead data plate of the sort required by Section 2.20.2.1, and that plate shall bear the following flat steel coated belt data:
 - a. The number of belts,
 - b. The belt width and thickness in millimeters or inches, and
 - c. The manufacturer's rated breaking strength per belt in (kN) or (lbf).
 7. If the seismic reset switch does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the inspection and test control panel located in one upper floor hoistway door jamb or in the control space (outside the hoistway) used by the motion controller.
 8. If the inspection transfer switch required by ASME A17.1, rule 2.26.1.4.4(a), does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the inspection and test control panel located in one upper floor hoistway door jamb or in the control space (outside the hoistway) used by the motion controller.
 9. When the inspection and test control panel is located in the hoistway door jamb, the inspection and test control panel shall be openable only by use of a Security Group I restricted key.
 10. The opening to the hoistway shall be effectively barricaded when car top inspection, maintenance, servicing, or testing of elevator equipment in the hoistway is required. If service personnel must leave the area for any reason, the hoistway and control room doors shall be closed.
 11. If there is an inset car top railing:
 - a. Serviceable equipment shall be positioned so that mechanics and inspectors do not have to climb on railings to perform adjustment, maintenance, repairs, or

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Otis Gen2(O) and/or Gen2L Elevators (Group IV)

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- inspections. The applicant shall not permit anyone to stand on or climb over the car top railing.
- b. The distance that the car top railing may be inset from the car top perimeter shall be limited to no more than 6 inches.
 - c. All exposed areas of the car top outside the car top railing shall preclude standing or placing objects or persons which may fall and shall be beveled from the mid- or top rail to the outside of the car top.
 - d. The top of the beveled area and/or the car top outside the railing, shall be clearly marked. The markings shall consist of alternating four-inch diagonal red and white stripes.
 - e. The Applicant shall provide, on each inset railing, durable signs with lettering not less than ½ inch on a contrasting background. Each sign shall state:

CAUTION

DO NOT STAND ON OR CLIMB OVER RAILING

- f. The Group IV requirements for car top clearances shall be maintained (car top clearances outside the railing shall be measured from the car top, and not from the required bevel).
- 12. The elevator shall be serviced, maintained, adjusted, tested, and inspected only by Certified Competent Conveyance Mechanics who have been trained to, and are competent to, perform those tasks on the Gen2(O) and/or Gen2L elevator system the Applicant proposes to use, in accordance with the written procedures and criteria required by Condition No. 4 and the terms of this permanent variance.
 - 13. Any Certified Qualified Conveyance Company performing inspections, maintenance, servicing, or testing of the elevators shall be provided a copy of this variance decision.
 - 14. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division, and a Permit to Operate shall be issued before the elevator is placed in service.
 - 15. The Applicant shall be subject to the suspension means replacement reporting condition stated in Addendum 2; that condition is incorporated herein by this reference.
 - 16. The applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way that the Applicant was required to notify them of the

Proposed Variance Decision

Otis Gen2(O) and/or Gen2L Elevators (Group IV)

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application for permanent variance, per California Code of Regulations, Title 8, Sections 411.2 and 411.3.

17. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in accordance with procedures per Title 8, Division 1, Chapter 3.5.

Pursuant to California Code of Regulations, Title 8, Section 426(b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

ADDENDUM 1

October 6, 2010

CIRCULAR LETTER E-10-04

TO: Installers, Manufacturers of Conveyances and Related Equipment and, Other Interested Parties

SUBJECT: Coated Steel Belt Monitoring

The Elevator Safety Orders require routine inspection of the suspension means of an elevator to assure its safe operation.

The California Labor Code Section 7318 allows the Division to promulgate special safety orders in the absence of regulation.

As it is not possible to see the steel cable suspension means of a Coated Steel Belt, a monitoring device which has been accepted by the Division is required on all Coated Steel Belts which will automatically stop the car if the residual strength of any belt drops below 60%. The Device shall prevent the elevator from restarting after a normal stop at a landing.

The monitoring device must be properly installed and functional. A functioning device may be removed only after a determination has been made that the residual strength of each belt exceeds 60%. These findings and the date of removal are to be conspicuously documented in the elevator machine room. The removed device must be replaced or returned to proper service within 30 days.

If upon routine inspection, the monitoring device is found to be in a non-functional state, the date and findings are to be conspicuously documented in the elevator machine room.

If upon inspection by the Division, the monitoring device is found to be non-functional or removed, and the required documentation is not in place, the elevator will be removed from service.

If the device is removed to facilitate belt replacement, it must be properly installed and functional before the elevator is returned to service.

A successful test of the device's functionality shall be conducted once a year.

This circular does not preempt the Division from adopting regulations in the future, which may address the monitoring of Coated Steel Belts or any other suspension means.

This circular does not create an obligation on the part of the Division to permit new conveyances utilizing Coated Steel Belts.

Debra Tudor
Principal Engineer
DOSH-Elevator Unit HQS

ADDENDUM 2

Suspension Means – Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings.

Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Place, Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.

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Otis Gen2(O) and/or Gen2L Elevators (Group IV)

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- f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
 - g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.
 - h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in item 2a above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
Schindler Model 3300 Elevators with Sil-Rated)
Drive to De-energize Drive Motor)
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p>Schindler 3300 with SIL-Rated Drive to De-energize Drive Motor (Group IV)</p>	<p>OSHSB File Nos.: Per table, in Jurisdictional and Procedural Matters below</p> <p><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
--	---

Jurisdictional and Procedural Matters

1. Each below listed applicant (“Applicant”) has applied for permanent variance from certain provisions of the Elevator Safety Orders, found at title 8, of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
21-V-018	E On Harvard, LLC	919 S Harvard Blvd. Los Angeles, CA	1
21-V-045	Welcome to the Dairy, LLC	3102 36th Street Los Angeles, CA	1
21-V-046	Oregon Trail, LLC	1147 S. Hope St. Los Angeles, CA	1
21-V-047	LINC-CORE San Pedro Lofts, LP	456 W. 9th Street Los Angeles, CA	2
21-V-048	Chateau Celeste Incorporated	1175 N Vermont Ave. Los Angeles, CA	1
21-V-049	Ball Horticultural Company dba PanAmerican Seed Co.	400 Obispo St. Guadalupe, CA	1
21-V-050	4900 Los Feliz Investors, LLC	4900 Hollywood Blvd. Los Angeles, CA	3
21-V-051	Vista Global Academies	2609 W. 5th Street Santa Ana, CA	1
21-V-063	M & A Gabae, A California Limited Partnership	34175 Pacific Coast Hwy Dana Point, CA	2

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

Proposed Variance Decision

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21-V-064	Latigo Thousand Oaks, LLC	299 E Thousand Oaks Blvd. Thousand Oaks, CA	2
21-V-066	751 Oliver LLC	751 S. Burlingame Ave. Los Angeles, CA	1
21-V-067	T&M Properties, LLC	400 Carlton Ave. Los Gatos, CA	1
21-V-077	Live Work Create Equity LLC	1010 S. Kenmore Ave. Los Angeles, CA	3
21-V-079	St. Anton Tasman East LP	2231 Calle Del Mundo Santa Clara, CA	2
21-V-080	2922 S. Crenshaw Blvd (LA) Owner, LLC	2922 S. Crenshaw Los Angeles, CA	4

2. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.
3. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
4. At the hearing, Jennifer Linares, with the Schindler Elevator Company, appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”), and Michael Nelmidia appeared on behalf of Board staff, in a technical advisory role apart from the Board.
5. Oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: each respective permanent variance applications per Section A table as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application Memorandum as PD-3, Division Review of Application as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s rulemaking records, and variance decisions concerning the safety order requirements from which variance is requested. At close of hearing on April 21, 2021, the record was closed, and the matter taken under submission by the Hearing Officer.

Relevant Safety Order Provisions

Applicant seeks a permanent variance from section 3141 [ASME A.17.1-2004, sections 2.20.1, 2.20.2.1, 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.5.4, 2.26.1.4.4(a), 8.4.10.1.1(a)(2)(B), 2.14.1.7.1, and 2.26.9.6.1]. The relevant language of those sections are below.

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1. Suspension Means

Section 3141 [ASME A17.1-2004, section 2.20.1, Suspension Means] states in part:

Elevator cars shall be suspended by steel wire ropes attached to the car frame or passing around sheaves attached to the car frame specified in 2.15.1. Ropes that have previously been installed and used on another installation shall not be reused. Only iron (low-carbon steel) or steel wire ropes, having the commercial classification "Elevator Wire Rope," or wire rope specifically constructed for elevator use, shall be used for the suspension of elevator cars and for the suspension of counterweights. The wire material for ropes shall be manufactured by the open-hearth or electric furnace process, or their equivalent.

Section 3141 [ASME A17.1-2004, section 2.20.2.1(b), On Crosshead Data Plate] states in part:

The crosshead data plate required by 2.16.3 shall bear the following wire-rope data:

(b) the diameter in millimeters (mm) or inches (in.)

Section 3141 [ASME A17.1-2004, section 2.20.2.2(a) and (f) On Rope Data Tag] states in part:

A metal data tag shall be securely attached-to-one of the wire-rope fastenings. This data tag shall bear the following wire-rope data:

(a) the diameter in millimeters (mm) or inches (in.)

[...]

(f) whether the ropes were non preformed or preformed

Section 3141 [ASME A17.1-2004, section 2.20.3, Factor of Safety] states:

The factor of safety of the suspension wire ropes shall be not less than shown in Table 2.20.3. Figure 8.2.7 gives the minimum factor of safety for intermediate rope speeds. The factor of safety shall be based on the actual rope speed corresponding to the rated speed of the car.

The factor of safety shall be calculated by the following formula:

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$$f = \frac{S \times N}{W}$$

where:

N= number of runs of rope under load. For 2:1 roping, N shall be two times the number of ropes used, etc.

S= manufacturer's rated breaking strength of one rope

W= maximum static load imposed on all car ropes with the car and its rated load at any position in the hoistway

Section 3141 [ASME A17.1-2004, section 2.20.4, Minimum Number and Diameter of Suspension Ropes] states:

The minimum number of hoisting ropes used shall be three for traction elevators and two for drum-type elevators.

Where a car counterweight is used, the number of counterweight ropes used shall be not less than two.

The term "diameter," where used in reference to ropes, shall refer to the nominal diameter as given by the rope manufacturer.

The minimum diameter of hoisting and counterweight ropes shall be 9.5 mm (0.375 in.). Outer wires of the ropes shall be not less than 0.56 mm (0.024 in.) in diameter.

Section 3141 [ASME A17.1-2004, section 2.20.9.3.4] states:

Cast or forged steel rope sockets, shackle rods, and their connections shall be made of unwelded steel, having an elongation of not less than 20% in a gauge length of 50 mm (2 in.), when measured in accordance with ASTM E 8, and conforming to ASTM A 668, Class B for forged steel, and ASTM A 27, Grade 60/30 for cast steel, and shall be stress relieved. Steels of greater strength shall be permitted, provided they have an elongation of not less than 20% in a length of 50 mm (2 in.).

Section 3141 [ASME A17.1-2004, section 2.20.9.5.4] states:

When the rope has been seated in the wedge socket by the load on the rope, the wedge shall be visible, and at least two wire-rope retaining clips shall be provided

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to attach the termination side to the load-carrying side of the rope (see Fig. 2.20.9.5). The first clip shall be placed a maximum of 4 times the rope diameter above the socket, and the second clip shall be located within 8 times the rope diameter above the first clip. The purpose of the two clips is to retain the wedge and prevent the rope from slipping in the socket should the load on the rope be removed for any reason. The clips shall be designed and installed so that they do not distort or damage the rope in any manner.

2. Inspection Transfer Switch

Section 3141[ASME A17.1-2004, section 2.26.1.4.4(a), Machine Room Inspection Operation] states:

When machine room inspection operation is provided, it shall conform to 2.26.1.4.1, and the transfer switch shall be

(a) located in the machine room[.]

3. Seismic Reset Switch

Section 3141[ASME A17.1-2004, section 8.4.10.1.1(a)(2)(b), Earthquake Equipment] states:

(a) All traction elevators operating at a rated speed of 0.75 m/s (150 ft/min) or more and having counterweights located in the same hoistway shall be provided with the following:

(1) seismic zone 3 or greater: a minimum of one seismic switch per building

(2) seismic zone 2 or greater:

(a) a displacement switch for each elevator

(b) an identified momentary reset button or switch for each elevator, located in the control panel in the elevator machine room

4. Car-top Railings

Section 3141[ASME A17.1-2004, section 2.14.1.7.1] states:

A standard railing conforming to 2.10.2 shall be provided on the outside perimeter of the car top on all sides where the perpendicular distance between the edges of the car top and the adjacent hoistway enclosure exceeds 300 mm (12 in.) horizontal clearance.

5. SIL-Rated System to Inhibit Current Flow to AC Drive Motor

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Section 3141[ASME A17.1-2004, section 2.26.9.6.1] states:

Two separate means shall be provided to independently inhibit the flow of alternating current through the solid state devices that connect the direct current power source to the alternating-current driving motor. At least one of the means shall be an electromechanical relay.

Findings of Fact

Based on the record of this proceeding, the Board finds the following:

1. Applicant intends to utilize Schindler model 3300 MRL elevator cars at the locations listed in Jurisdictional and Procedural Matters, section 1.
2. The installation contract for these elevator was or will be signed on or after May 1, 2008, thus making the elevator subject to the Group IV Elevator Safety Orders.
3. The Schindler model 3300 MRL elevator cars are not supported by circular steel wire ropes, as required by the Elevator Safety Orders (ESO). They utilize non-circular elastomeric-coated steel belts and specialized suspension means fastenings.
4. No machine room is provided, preventing the inspection transfer switch from being located in the elevator machine room. The lack of machine room also prevents the seismic reset switch from being located in the elevator machine room.
5. Applicant proposes to relocate the inspection transfer switch and seismic reset switch in an alternative enclosure.
6. The driving machine and governor are positioned in the hoistway and restrict the required overhead clearance to the elevator car top.
7. Applicant proposes to insert the car-top railings at the perimeter of the car top.
8. Applicant intends to use an elevator control system, model CO NX100NA, with a standalone, solid-state motor control drive system that includes devices and circuits having a Safety Integrity Level (SIL) rating to execute specific elevator safety functions.

Conclusive Findings:

The above-stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent

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variance may be conditionally granted; and (2) a preponderance of the evidence establishes that Applicant's proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of California Code of Regulation, Title 8, Elevator Safety Orders from which variance is being sought.

Decision and Order:

Each Application being the subject of this proceeding, per the table in Jurisdictional and Procedural Matters, section 1 above, is conditionally GRANTED, to the extent that each such Applicant shall be issued permanent variance from California Code of Regulations, Title 8, section 3141 shall be GRANTED subject to the following conditions and limitations:

Elevator Safety Orders:

- Suspension Means: 2.20.1, 2.20.2.1, 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.3.4, and 2.20.9.5.4 (Only to the extent necessary to permit the use of the Elastomeric-coated Steel Belts proposed by the Applicant, in lieu of circular steel suspension ropes.);
- Inspection transfer switch: 2.26.1.4.4(a) (Only to the extent necessary to permit the inspection transfer switch to reside at a location other than the machine room);
- Seismic reset switch: 8.4.10.1.1(a)(2)(b) (Only to the extent necessary to permit the seismic reset switch to reside at a location other than the machine room. room);
- Car-Top Railing: 2.14.1.7.1 (Only to the extent necessary to permit the use of the car-top railing system proposed by the Applicant, where the railing system is located inset from the elevator car top perimeter);
- Means of Removing Power: 2.26.9.6.1 (Only to the extent necessary to permit the use of SIL-rated devices and circuits as a means to remove power from the AC driving motor, where the redundant monitoring of electrical protective devices is required by the Elevator Safety Orders).

Conditions:

1. The elevator suspension system shall comply to the following:
 - a. The suspension traction media (STM) members and their associated fastenings shall conform to the applicable requirements of ASME A17.1-2013, sections:
 - 2.20.4.3 – Minimum Number of Suspension Members
 - 2.20.3 – Factor of Safety

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2.20.9 – Suspension Member Fastening

- b. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the installation, maintenance, inspection and testing of the STM members and fastenings and related monitoring and detection systems and criteria for STM replacement, and the Applicant shall make those procedures and criteria available to the Certified Competent Conveyance Mechanic (CCCM) at the location of the elevator, and to the Division upon request.

STM member mandatory replacement criteria shall include:

- i. Any exposed wire, strand or cord;
 - ii. Any wire, strand or cord breaks through the elastomeric coating;
 - iii. Any evidence of rouging (steel tension element corrosion) on any part of the elastomeric-coated steel suspension member;
 - iv. Any deformation in the elastomeric suspension member such as, but not limited to, kinks or bends;
- c. Traction drive sheaves must have a minimum diameter of 72 mm. The maximum speed of STM members running on 72 mm, 87 mm and 125 mm drive sheaves shall be no greater than 2.5 m/s, 6.0 m/s and 8.0 m/s respectively.
 - d. If any one STM member needs replacement, the complete set of suspension members on the elevator shall be replaced. Exception: if a new suspension member is damaged during installation, and prior to any contemporaneously installed STM having been placed into service, it is permissible to replace the individual damaged suspension member. STM members that have been installed on another installation shall not be re-used.
 - e. A traction loss detection means shall be provided that conforms to the requirements of ASME A17.1-2013, section 2.20.8.1. The means shall be tested for correct function annually in accordance with ASME A17.1-2013, section 8.6.4.19.12.
 - f. A broken suspension member detection means shall be provided that conforms to the requirements of ASME A17.1-2013, section 2.20.8.2. The means shall be tested for correct function annually in accordance with ASME A17.1-2013, section 8.6.4.19.13(a).
 - g. An elevator controller integrated bend cycle monitoring system shall monitor actual STM bend cycles, by means of continuously counting, and storing in nonvolatile memory, the number of trips that the STM makes traveling, and thereby being bent, over the elevator sheaves. The bend cycle limit monitoring means shall automatically stop the car normally at the next available landing before the bend cycle correlated residual strength of any single STM member drops below 80 percent of full rated

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- strength. The monitoring means shall prevent the car from restarting. The bend cycle monitoring system shall be tested annually in accordance with the procedures required by condition 1b above.
- h. The elevator shall be provided with a device to monitor the remaining residual strength of each STM member. The device shall conform to the requirements of Division Circular Letter E-10-04, a copy of which is attached hereto as Exhibit 1 and incorporated herein by reference.
 - i. The elevator crosshead data plate shall comply with the requirements of ASME A17.1-2013, section 2.20.2.1.
 - j. A suspension means data tag shall be provided that complies with the requirements of ASME A17.1-2013, section 2.20.2.2.
 - k. Comprehensive visual inspections of the entire length of each and all installed suspension members, to the criteria developed in condition 1b, shall be conducted and documented every six months by a CCCM.
 - l. The Applicant shall be subject to the requirements set out in Exhibit 2 of this Decision and Order, "Suspension Means Replacement Reporting Condition," Incorporated herein by this reference.
 - m. Records of all tests and inspections shall be maintenance records subject to ASME A17.1-2004, sections 8.6.1.2 and 8.6.1.4, respectively.
2. If the inspection transfer switch required by ASME A17.1-2004, section 2.26.1.4.4 does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the control/machinery room/space containing the elevator's control equipment in an enclosure secured by a lock openable by a Group 1 security key. The enclosure is to remain locked at all times when not in use.
 3. If the seismic reset switch does not reside in the machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the control/machinery room/space containing the elevator's control equipment in an enclosure secured by a lock openable by a Group 1 security key. The enclosure is to remain locked at all times when not in use.
 4. If there is an inset car-top railing:
 - a. Serviceable equipment shall be positioned so that mechanics and inspectors do not have to climb on the railings to perform adjustments, maintenance, repairs or inspections. The Applicant shall not permit anyone to stand or climb over the car-top railing.

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- b. The distance that the railing can be inset shall be limited to not more than 6 inches.
- c. All exposed areas of the car top outside the car-top railing where the distance from the railing to the edge of the car top exceeds 2 inches, shall be beveled with metal, at an angle of not less than 75 degrees with the horizontal, from the mid or top rail to the outside of the car top, such that no person or object can stand, sit, kneel, rest, or be placed in the exposed areas.
- d. The top of the beveled area and/or car top outside the railing shall be clearly marked. The markings shall consist of alternating 4-inch diagonal red and white stripes.
- e. The applicant shall provide durable signs with lettering not less than 1/2 inch on a contrasting background on each inset railing. Each sign shall state:

**CAUTION
STAY INSIDE RAILING
NO LEANING BEYOND RAILING
NO STEPPING ON, OR BEYOND, RAILING**

- f. The Group IV requirements for car-top clearances shall be maintained (car-top clearances outside the railing will be measured from the car top and not from the required bevel).
5. The SIL-rated devices and circuits used to inhibit electrical current flow in accordance with ASME A17.1-2004, section 2.26.9.6.1 shall comply with the following:
- a. The SIL-rated devices and circuits shall consist of a Variodyn SIL-3 rated Regenerative, Variable Voltage Variable Frequency (VVVF) motor drive unit, model VAF013 or VAF023, labeled or marked with the SIL rating (not less than SIL 3), the name or mark of the certifying organization, and the SIL certification number (968/FSP 1556.00), and followed by the applicable revision number (as in 968/FSP 1556.00/19).
 - b. The devices and circuits shall be certified for compliance with the applicable requirements of ASME A17.1-2013, section 2.26.4.3.2.
 - c. The access door or cover of the enclosures containing the SIL-rated components shall be clearly labeled or tagged on their exterior with the statement:

**Assembly contains SIL-rated devices.
Refer to Maintenance Control Program and
wiring diagrams prior to performing work.**

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- d. Unique maintenance procedures or methods required for the inspection, testing, or replacement of the SIL-rated circuits shall be developed and a copy maintained in the elevator machine/control room/space. The procedures or methods shall include clear color photographs of each SIL-rated component, with notations identifying parts and locations.
 - e. Wiring diagrams that include part identification, SIL, and certification information shall be maintained in the elevator machine/control room/space.
 - f. A successful test of the SIL-rated devices and circuits shall be conducted initially and not less than annually in accordance with the testing procedure. The test shall demonstrate that SIL-rated devices, safety functions, and related circuits operate as intended.
 - g. Any alterations to the SIL-rated devices and circuits shall be made in compliance with the Elevator Safety Orders. If the Elevator Safety Orders do not contain specific provisions for the alteration of SIL-rated devices, the alterations shall be made in conformance with ASME A17.1-2013, section 8.7.1.9.
 - h. Any replacement of the SIL-rated devices and circuits shall be made in compliance with the Elevator Safety Orders. If the Elevator Safety Orders do not contain specific provisions for the replacement of SIL-rated devices, the replacement shall be made in conformance with ASME A17.1-2013, section 8.6.3.14.
 - i. Any repairs to the SIL-rated devices and circuits shall be made in compliance with the Elevator Safety Orders. If the Elevator Safety Orders do not contain specific provisions for the repair of SIL-rated devices, the repairs shall be made in conformance with ASME A17.1-2013, section 8.6.2.6.
 - j. Any space containing SIL-rated devices and circuits shall be maintained within the temperature and humidity range specified by Schindler Elevator Corporation. The temperature and humidity range shall be posted on each enclosure containing SIL-rated devices and circuits.
 - k. Field changes to the SIL-rated system are not permitted. Any changes to the SIL-rated system's devices and circuitry will require recertification and all necessary updates to the documentation and diagrams required by conditions d. and e. above.
6. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division, and all applicable requirements met, including conditions of this permanent variance, prior to a Permit to Operate the elevator being issued. The elevator shall not be placed in service prior to the Permit to Operate being issued by Division.

Proposed Variance Decision

Schindler 3300 with SIL-Rated Drive to De-energize Drive Motor (Group IV)

Hearing Date: April 21, 2021

7. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way that the Applicant was required to notify them of the docketed application for permanent variance per sections 411.2 and 411.3.
8. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in the procedural manner prescribed per the Board's procedural regulations.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

DATED: April 21, 2021


Autumn Gonzalez, Hearing Officer

*Proposed Variance Decision
Schindler 3300 with SIL-Rated Drive to De-energize Drive Motor (Group IV)
Hearing Date: April 21, 2021*

EXHIBIT 1

October 6, 2010

CIRCULAR LETTER E-10-04

TO: Installers, Manufacturers of Conveyances and Related Equipment and Other Interested Parties

SUBJECT: Coated Steel Belt Monitoring

The Elevator Safety Orders require routine inspection of the suspension means of an elevator to assure its safe operation.

The California Labor Code Section 7318 allows the Division to promulgate special safety orders in the absence of regulation.

As it is not possible to see the steel cable suspension means of a Coated Steel Belt, a monitoring device which has been accepted by the Division is required on all Coated Steel Belts which will automatically stop the car if the residual strength of any belt drops below 60%. The Device shall prevent the elevator from restarting after a normal stop at a landing.

The monitoring device must be properly installed and functional. A functioning device may be removed only after a determination has been made that the residual strength of each belt exceeds 60%. These findings and the date of removal are to be conspicuously documented in the elevator machine room. The removed device must be replaced or returned to proper service within 30 days.

If upon routine inspection, the monitoring device is found to be in a non-functional state, the date and findings are to be conspicuously documented in the elevator machine room.

If upon inspection by the Division, the monitoring device is found to be non-functional or removed, and the required documentation is not in place, the elevator will be removed from service.

If the device is removed to facilitate belt replacement, it must be properly installed and functional before the elevator is returned to service.

A successful test of the device's functionality shall be conducted once a year.

This circular does not preempt the Division from adopting regulations in the future, which may address the monitoring of Coated Steel Belts or any other suspension means.

This circular does not create an obligation on the part of the Division to permit new conveyances utilizing Coated Steel Belts.

Debra Tudor
Principal Engineer
DOSH-Elevator Unit HQS

EXHIBIT 2

Suspension Means – Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings. Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Pl., Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.
 - f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
 - g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.

Proposed Variance Decision

Schindler 3300 with SIL-Rated Drive to De-energize Drive Motor (Group IV)

Hearing Date: April 21, 2021

- h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in item 2a above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
)
Otis Gen 2S Elevators (Group IV))
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application for Permanent Variance Regarding: <p style="text-align: center;">Otis Gen2S Elevators (Group IV)</p>	OSHSB File Nos.: Per Section A table, below <p style="text-align: center;"><u>PROPOSED DECISION</u></p> Hearing Date: April 21, 2021
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A. Subject Matter

- Each below listed applicant (“Applicant”) has applied for permanent variances from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, with respect to the listed conveyance or conveyances, in the specified quantity, at the specified location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
21-V-042	City of South Francisco	Library and Park & Recreation Facility 1010 El Camino Real South San Francisco, CA	2
21-V-043	St. Andrews Palace, LLC.	723 S. St. Andrews Pl. Los Angeles, CA	2
21-V-044	Violet QOZB Owner, LLC	2130 E. Violet Street Los Angeles, CA	3
21-V-069	Pulte Home Company LLC	298 Waters Park Circle San Mateo, CA	1
21-V-070	Bakersfield University Office Center, L.P.	Bakersfield University Office Center 9400 Camino Media Bakersfield, CA	2
21-V-071	Folsom Cordova Unified School District	Mangini Ranch Elementary School 4640 Sparrow Drive Folsom, CA	1

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

*Proposed Variance Decision
 Otis Gen2S Elevators (Group IV)
 Hearing Date: April 21, 2021*

21-V-072	KLACP, LLC Golden Bridge International Investment, Inc.	748 Irolo Street Los Angeles, CA	1
21-V-073	Westwood Regent, LLC	1855 Westwood Blvd. Los Angeles, CA	2
21-V-074	ABR Realty LLC	1507 S Hi Point St. Los Angeles, CA	1
21-V-078	The Church of Jesus Christ of Latter Day Saints	1470 Butte House Rd. Yuba City, CA	1
21-V-086	211 Brand LLC	211 Brand Blvd. Glendale, CA	1
21-V-087	San Fernando Studios LP	215 N. San Fernando Rd. Los Angeles, CA	2
21-V-088	City of Hope National Medical Center	Northeast Parking Structure 1500 E. Duarte Road Duarte, CA	4
21-V-089	4Mica LP	751 S Valencia Street Los Angeles, CA	1
21-V-090	17422 Derian Irvine LLC	Pistoia Apartments 17422 Derian Avenue Irvine, CA	2
21-V-091	748-762 Kingsley Drive, LLC	750 S. Kingsley Drive Los Angeles, CA	1

2. The safety orders from which variance may issue, are enumerated in the portion of the below Decision and Order preceding the variance conditions.

B. Procedural

1. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq.
2. This hearing was held on April 21, 2021, in Sacramento, California, and via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.

*Proposed Variance Decision
Otis Gen2S Elevators (Group IV)
Hearing Date: April 21, 2021*

3. At the hearing, Dan Leacox of Leacox & Associates, appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”), and Michael Nelmidia appeared on behalf of Board staff, in a technical advisory role apart from the Board.
4. Oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: each respective permanent variance applications per Section A table as Exhibit PD-1; Notice of Hearing as Exhibit PD-2; Board staff Pending Application Memorandum as PD-3; Division Review of Application as PD-4; Review Draft 1 Proposed Decision as PD-5; and official notice taken of the Board’s rulemaking records, and variance files and decisions, concerning the Elevator Safety Order standards at issue. At close of hearing on April 21, 2021, the record was closed, and the matter taken under submission by the Hearing Officer.

C. Findings and Basis:

Based on the record of this hearing, the Board makes the following findings of fact:

1. Each Applicant intends to utilize Otis Gen2S elevators at the locations and in the numbers stated in the above Section A table.
2. The installation contracts for these elevators were or will be signed on or after May 1, 2008, making the elevators subject to the Group IV Elevator Safety Orders.
3. The Board incorporates by reference Items (i.e. Sections) D.3 through D.9 of the Proposed Decision adopted by the Board on July 18, 2013 regarding OSHSB File No. 12-V-093 and Item D.4 of the Proposed Decision adopted by the Board on September 25, 2014 in OSHSB File No. 14-V-206.
4. Both Board staff and Division, by way of written submissions to the record (Exhibits PD-3 and PD-4 respectively), and positions stated at hearing, are of the well informed opinion that grant of requested permanent variance, as limited and conditioned per the below Decision and Order will provide employment, places of employment, and subject conveyances, as safe and healthful as would prevail given non-variant conformity with the Elevator Safety Order requirements from which variance has been requested.

D. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with

the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted; and (2) a preponderance of the evidence establishes that each Applicants proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of California Code of Regulation, Title 8, Elevator Safety Orders from which variance is being sought.

E. Decision and Order:

Each permanent variance application the subject of this proceeding is conditionally GRANTED as specified below, and to the extent, as of the date the Board adopts this Proposed Decision, each Applicant listed in the above Section A table shall have permanent variances from California Code of Regulations, Title 8, Section 3141 and from the following sections of ASME A17.1-2004 that Section 3141 makes applicable to the elevators the subject of those applications:

- Car top railing: Sections 2.14.1.7.1 (only to the extent necessary to permit an inset car top railing, if, in fact, the car top railing is inset);
- Speed governor over-speed switch: 2.18.4.2.5(a) (only insofar as is necessary to permit the use of the speed reducing system proposed by the Applicants, where the speed reducing switch resides in the controller algorithms, rather than on the governor, with the necessary speed input supplied by the main encoder signal from the motor);
- Governor rope diameter: 2.18.5.1 (only to the extent necessary to allow the use of reduced diameter governor rope);
- Pitch diameter: 2.18.7.4 (to the extent necessary to use the pitch diameter specified in Condition No. 13.c);
- Suspension means: 2.20.1, 2.20.2.1, 2.20.2.2(a), 2.20.2.2(f), 2.20.3, 2.20.4, 2.20.9.3.4 and 2.20.9.5.4—the variances from these “suspension means” provisions are only to the extent necessary to permit the use of Otis Gen2 flat coated steel suspension belts in lieu of conventional steel suspension ropes;
- Inspection transfer switch: 2.26.1.4.4(a) (only to the extent necessary to allow the inspection transfer switch to reside at a location other than a machine room, if, in fact, it does not reside in the machine room); and

*Proposed Variance Decision
Otis Gen2S Elevators (Group IV)
Hearing Date: April 21, 2021*

- Seismic reset switch: 8.4.10.1.1(a)(2)(b) (only to the extent necessary to allow the seismic reset switch to reside at a location other than a machine room, if, in fact, it does not reside in the machine room).

These variances apply to the locations and numbers of elevators stated in the Section A table (so long as the elevators are Gen2S Group IV devices that are designed, equipped, and installed in accordance with, and are otherwise consistent with, the representations made in the Otis Master File [referred to in previous proposed decisions as the “Gen2 Master File”] maintained by the Board, as that file was constituted at the time of this hearing) and are subject to the following conditions:

1. The suspension system shall comply with the following:
 - a. The coated steel belt and connections shall have factors of safety equal to those permitted for use by Section 3141 [ASME A17.1-2004, Section 2.20.3] on wire rope suspended elevators.
 - b. Steel coated belts that have been installed and used on another installation shall not be reused.
 - c. The coated steel belt shall be fitted with a monitoring device which has been accepted by the Division and which will automatically stop the car if the residual strength of any single belt drops below 60 percent. If the residual strength of any single belt drops below 60 percent, the device shall prevent the elevator from restarting after a normal stop at a landing.
 - d. Upon initial inspection, the readings from the monitoring device shall be documented and submitted to the Division.
 - e. A successful test of the monitoring device’s functionality shall be conducted at least once a year (the record of the annual test of the monitoring device shall be a maintenance record subject to ASME A17.1-2004, Section 8.6.1.4).
 - f. The coated steel belts used shall be accepted by the Division.
2. With respect to each elevator subject to this variance, the applicant shall comply with Division Circular Letter E-10-04, the substance of which is attached hereto as Addendum 1 and incorporated herein by this reference.
3. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the installation, maintenance, inspection, and testing of the belts and

monitoring device and criteria for belt replacement, and the applicant shall make those procedures and criteria available to the Division upon request.

4. The flat coated steel belts shall be provided with a metal data tag that is securely attached to one of those belts. This data tag shall bear the following flat steel coated belt data:
 - a. The width and thickness in millimeters or inches;
 - b. The manufacturer's rated breaking strength in (kN) or (lbf);
 - c. The name of the person or organization that installed the flat coated steel belts;
 - d. The month and year the flat coated steel belts were installed;
 - e. The month and year the flat coated steel belts were first shortened;
 - f. The name or trademark of the manufacturer of the flat coated steel belts; and
 - g. Lubrication information.
5. There shall be a crosshead data plate of the sort required by Section 2.20.2.1, and that plate shall bear the following flat steel coated belt data:
 - a. The number of belts;
 - b. The belt width and thickness in millimeters or inches; and
 - c. The manufacturer's rated breaking strength per belt in (kN) or (lbf).
6. The opening to the hoistway shall be effectively barricaded when car top inspection, maintenance, servicing, or testing of elevator equipment in the hoistway is required. If service personnel must leave the area for any reason, the hoistway and control room doors shall be closed.
7. If there is an inset car top railing:
 - a. Serviceable equipment shall be positioned so that mechanics and inspectors do not have to climb on railings to perform adjustment, maintenance, repairs or inspections. The applicant shall not permit anyone to stand on or climb over the car top railing.

- b. The distance that the car top railing may be inset shall be limited to no more than 6 inches.
- c. All exposed areas outside the car top railing shall preclude standing or placing objects or persons which may fall and shall be beveled from the mid- or top rail to the outside of the car top.
- d. The top of the beveled area and/or car top outside the railing, shall be clearly marked. The markings shall consist of alternating 4 inch diagonal red and white stripes.
- e. The applicant shall provide durable signs with lettering not less than ½ inch on a contrasting background on each inset railing; each sign shall state:

**CAUTION
DO NOT STAND ON OR CLIMB OVER RAILING**

- f. The Group IV requirements for car top clearances shall be maintained (car top clearances outside the railing shall be measured from the car top and not from the required bevel).
- 8. If the seismic reset switch does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the inspection and test control panel located in one upper floor hoistway door jamb or in the control space (outside the hoistway) used by the motion controller.
 - 9. If the inspection transfer switch required by ASME A17.1, rule 2.26.1.4.4(a) does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the inspection and test control panel located in one upper floor hoistway door jamb or in the control space (outside the hoistway) used by the motion controller.
 - 10. When the inspection and testing panel is located in the hoistway door jamb, the inspection and test control panel shall be openable only by use of a Security Group I restricted key.
 - 11. The elevator shall be serviced, maintained, adjusted, tested, and inspected only by Certified Competent Conveyance Mechanics who have been trained to, and are competent to, perform those tasks on the Gen2S elevator system in accordance with the

written procedures and criteria required by Condition No. 3 and in accordance with the terms of this permanent variance.

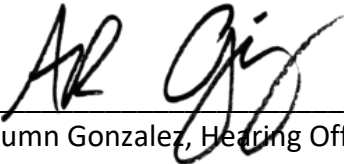
12. The governor speed-reducing switch function shall comply with the following:
 - a. It shall be used only with direct drive machines; i.e., no gear reduction is permitted between the drive motor and the suspension means.
 - b. The velocity encoder shall be coupled to the driving machine motor shaft. The "C" channel of the encoder shall be utilized for velocity measurements required by the speed reducing system. The signal from "C" channel of the encoder shall be verified with the "A" and "B" channels for failure. If a failure is detected then an emergency stop shall be initiated.
 - c. Control system parameters utilized in the speed-reducing system shall be held in non-volatile memory.
 - d. It shall be used in conjunction with approved car-mounted speed governors only.
 - e. It shall be used in conjunction with an effective traction monitoring system that detects a loss of traction between the driving sheave and the suspension means. If a loss of traction is detected, then an emergency stop shall be initiated.
 - f. A successful test of the speed-reducing switch system's functionality shall be conducted at least once a year (the record of the annual test of the speed-reducing switch system shall be a maintenance record subject to ASME A17.1-2004, Section 8.6.1.4).
 - g. A successful test of the traction monitoring system's functionality shall be conducted at least once a year (the record of the annual test of the traction monitoring system shall be a maintenance record subject to ASME A17.1-2004, Section 8.6.1.4).
 - h. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the maintenance, inspection, and testing of the speed-reducing switch and traction monitoring systems. The Applicant shall make the procedures available to the Division upon request.
13. The speed governor rope and sheaves shall comply with the following:
 - a. The governor shall be used in conjunction with a 6 mm (0.25 in.) diameter steel governor rope with 6-strand, regular lay construction.

*Proposed Variance Decision
Otis Gen2S Elevators (Group IV)
Hearing Date: April 21, 2021*

- b. The governor rope shall have a factor of safety of 8 or greater as related to the strength necessary to activate the safety.
 - c. The governor sheaves shall have a pitch diameter of not less than 180 mm (7.1 in.).
14. Any Certified Qualified Conveyance Company performing inspections, maintenance, servicing, or testing of the elevators shall be provided a copy of this variance decision.
15. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division, and a Permit to Operate shall be issued before the elevator is placed in service.
16. The Applicant shall be subject to the Suspension Means – Replacement Reporting Condition stated in Addendum 2, as hereby incorporated by this reference.
17. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way and to the same extent that employees and authorized representatives are to be notified of docketed permanent variance applications pursuant to sections 411.2 and 411.3.
18. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in accordance with procedures per the Board's regulations.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

ADDENDUM 1

October 6, 2010

CIRCULAR LETTER E-10-04

TO: Installers, Manufacturers of Conveyances and Related Equipment and, Other Interested Parties

SUBJECT: Coated Steel Belt Monitoring

The Elevator Safety Orders require routine inspection of the suspension means of an elevator to assure its safe operation.

The California Labor Code Section 7318 allows the Division to promulgate special safety orders in the absence of regulation.

As it is not possible to see the steel cable suspension means of a Coated Steel Belt, a monitoring device which has been accepted by the Division is required on all Coated Steel Belts which will automatically stop the car if the residual strength of any belt drops below 60%. The Device shall prevent the elevator from restarting after a normal stop at a landing.

The monitoring device must be properly installed and functional. A functioning device may be removed only after a determination has been made that the residual strength of each belt exceeds 60%. These findings and the date of removal are to be conspicuously documented in the elevator machine room. The removed device must be replaced or returned to proper service within 30 days.

If upon routine inspection, the monitoring device is found to be in a non-functional state, the date and findings are to be conspicuously documented in the elevator machine room.

If upon inspection by the Division, the monitoring device is found to be non-functional or removed, and the required documentation is not in place, the elevator will be removed from service.

If the device is removed to facilitate belt replacement, it must be properly installed and functional before the elevator is returned to service.

A successful test of the device's functionality shall be conducted once a year.

This circular does not preempt the Division from adopting regulations in the future, which may address the monitoring of Coated Steel Belts or any other suspension means.

This circular does not create an obligation on the part of the Division to permit new conveyances utilizing Coated Steel Belts.

Debra Tudor
Principal Engineer
DOSH-Elevator Unit HQS

ADDENDUM 2

Suspension Means – Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings.

Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Place, Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.

Proposed Variance Decision
Otis Gen2S Elevators (Group IV)
Hearing Date: April 21, 2021

- f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
 - g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.
 - h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in item 2a above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
Schindler Model 3300 Elevators with Variant)
Gov. Ropes & Sheaves (Group IV))
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p style="text-align: center;">Schindler Model 3300 Elevators with variant Gov. Ropes & Sheaves (Group IV)</p>	<p>OSHSB File Nos.: Per Section A table, below</p> <p style="text-align: center;"><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
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A. Subject Matter and Jurisdiction:

- Each below listed applicant (“Applicant”) has applied for permanent variance from certain provisions of the Elevator Safety Orders, found at title 8, of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
21-V-052	Coliseum Place II, L.P.	3300 Hawley Street Oakland, CA	1
21-V-053	La Jolla Cove Motel and Hotel Apartments, LLC	1155 Coast Blvd. La Jolla, CA	2
21-V-054	Onni Santa Monica Limited Partnership	6933 Santa Monica Blvd. Los Angeles, CA	3
21-V-065	Latigo Thousand Oaks, LLC	299 E Thousand Oaks Blvd. Thousand Oaks, CA	1
21-V-068	Serrano Square, LLC	1120 Serrano Ave. Los Angeles, CA	1
21-V-076	Planned Parenthood: Shasta-Diablo, Inc.	1522 Bush Street San Francisco, CA	1
21-V-092	Crescent Developments, LLC	9806 Vidor Dr. Los Angeles, CA	1

- This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq. of the Board’s procedural regulations.

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

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3. The safety orders at issue are set out in below Section C.1—C.4.

B. Process and Procedure:

1. This hearing was held on April 21, 2021, in Sacramento, California, via teleconference, by Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
2. At the hearing, Jennifer Linares, with the Schindler Elevator Corporation, appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”); and Michael Nelmidia appeared on behalf of Board staff, in a technical advisory role apart from the Board.
3. Oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: each respective permanent variance application per Section A table as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application Memorandum as PD-3, Division Review of Application as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s rulemaking records, and variance decisions concerning the safety order requirements from which variance is requested. At close of hearing on April 21, 2021, the record was closed, and the matter taken under submission by the Hearing Officer.

C. Findings of Fact—Based upon the record of this proceeding, the Board finds the following:

Requested Suspension Means Related Variance:

1. As each pertains to the non-circular elastomeric coated suspension means characteristic of the Schindler Model 3300 elevator, each Applicant presently seeks permanent variance from the following Title 8, Elevator Safety Order incorporated ASME Safety Code for Elevators and Escalators (ASME Code) A17.1-2004, sections and subsections:

Section 2.20.1—Wire rope suspension means

Section 2.20.2.1—Crosshead data plate

Subsection 2.20.2.2(a)—Wire rope data tag

Subsection 2.20.2.2(f)—ID of steel wire rope as preformed or nonpreformed

Section 2.20.3—Wire rope safety factor

Section 2.20.4—Number and diameter of wire ropes

Section 2.20.9.3.4—Wire rope end connections

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Section 2.20.9.5.4—Wire rope sockets

Requested Car Top Railing Inset Variance:

2. As it pertains to top of car railing placement requiring space occupied by upper hoistway mounted elevator machinery characteristic of the Schindler Model 3300 elevator, each Applicant presently seeks permanent variance from the following Elevator Safety Order incorporated ASME Code A17.1-2004, section:

Section 2.14.1.7.1—Top of Car Perimeter Railing Placement

Requested Seismic Reset Switch Placement Variance:

3. As it pertains to installation of the requisite seismic reset switch within a “machine room” location incompatible with machine-room-less design of the Schindler Model 3300 elevator, each Applicant presently seeks permanent variance from the following Title 8, Elevator Safety Order incorporated ASME Code subsection:

Subsection 8.4.10.1.1(a)(2)(b)--Seismic Reset Switch Placement in Machine Room

Requested Transfer Switch Placement Variance:

4. As it pertains to installation of the requisite transfer switch within a “machine room” location incompatible with machine-room-less design of the Schindler Model 3300 elevator, each Applicant presently seeks permanent variance from the following Elevator Safety Order incorporated ASME Code A17.1-2004, subsection:

Subsection 2.26.1.4.4(a)--Transfer Switch Placement in Machine Room

Requested Governor Sheave to Rope Diameter Ratio Variance:

5. As it pertains to installation of requisite pitch diameter of the governor sheaves and governor tension sheaves, each Applicant presently seeks permanent variance from the following Elevator Safety Order incorporated ASME Code A17.1-2004, subsection:

Section 3141 [ASME A17.1-2004, Section 2.18.7.4] states:

“The pitch diameter of governor sheaves and governor tension sheaves shall be not less than the product of the diameter of the rope and the applicable multiplier listed in Table 2.18.7.4, based on the rated speed and the number of strands in the rope.”

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Table 2.18.7.4 Multiplier for Determining Governor Sheave Pitch Diameter

Rated Speed, m/s (ft/min)	Number of Strands	Multiplier
1.00 or less (200 or less)	6	42
1.00 or less (200 or less)	8	30
Over 1.00 (over 200)	6	46
Over 1.00 (over 200)	8	32

50 mm (2 in.) when tested in accordance with ASTM E 8. Forged, cast, or welded parts shall be stress relieved. Cast iron shall have a factor of safety of not less than 10.

6. Per the Application, the proposal is stated as follows: “The approved speed governor provided for this elevator has a sheave diameter-to-governor rope diameter ratio [D/d] of 33. This is not compliant with the current Group IV Elevator Safety Orders which require a [D/d] of 42-46. Equivalent safety will be attained by providing a governor rope with a breaking strength that provides a factor of safety greater than that required by the Elevator Safety Orders, and a governor sheave diameter which complies with the requirements of ASME A17.1-2010, Section 2.18.5.1, and Section 2.18.7.4, which, under certain conditions, permits the use of a governor rope and governor sheave ratio [D/d] of not less than 30.”
7. Having analyzed the request, as reflected in its Review of Application (Exhibit PD-4) Division is of the well informed professional opinion that the proposal, in as much as it is to use a governor with sheave pitch diameter of not less than the product of the governor rope diameter and a multiplier of 30, in conjunction with a steel governor rope with a diameter of 6 mm (0.25 in.), 6-strand construction, and a factor of safety of 8 or greater, will provide safety, and workplace safety and health equivalent or superior to that of the ASME A17.1-2004, Section 2.18.7.4. Division also correctly notes Applicant’s proposed governor sheave pitch diameter, and reduced diameter governor rope installation is similar to installations for which a permanent variance has been previously conditionally granted. (e.g. OSHSB File No. 19-V-076)

Official Notice and Incorporation by Reference—OSHSB File No. 15-V-349:

8. Per hereby entered stipulation offered at hearing by Applicant, Division, and Board staff, concerning preexisting Board records, including decisions in matters of permanent variance from Elevator Safety Order requirements, the Board takes Official Notice and expressly incorporates herein by reference, OSHSB File No. 15-V-349, Decision and Order adopted November 17, 2016, Section D.1—D.75 findings, and therein entered record upon which it was based.

Proposed Variance Decision

Schindler Model 3300 Elevators w/variant Gov. Rope & Sheaves

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Positions of Division, and Board Staff:

9. Having fully reviewed each Applicant's request for variance from the above identified Elevator Safety Order requirements, it is the concurrent opinion of Division and Board staff, that conditionally limited grant to each Applicant of permanent variance as specified per the below Decision and Order, will provide for elevator safety, and occupational safety and health, equivalent or superior to that of the Elevator Safety Order requirements from which variance is being sought. The present opinion of Division and Board staff, to any extent it may vary from those previously held with respect to the previously heard matter in OSHSB File No. 15-V-349, reflects further scrutiny of the subject matter, consultation between Division, Board staff, Applicant representatives, and refinement of recommended conditions and limitations.

D. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted, and (2) a preponderance of the evidence establishes that each Applicant's proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of the Elevator Safety Orders from which variance is being sought.

E. Decision and Order:

Each Section A table identified Applicant is hereby conditionally GRANTED Permanent Variance as specified below, and to the limited extent, as of the date the Board adopts this Proposed Decision, with respect to the Section A specified number of Schindler Model 3300 elevator(s), at the specified location, each shall conditionally hold permanent variance from the following subparts of ASME A17.1-2004, currently incorporated by reference in section 3141.

Suspension Members: Each Applicant shall conditionally hold permanent variance from the following section 3141, incorporated sections and subsections of ASME A17.12004, to the limited extent variance is necessary to provide for use of noncircular elastomeric-coated steel suspension members and concomitant components, and configurations—Section 2.20.1; Section 2.20.2.1; Subsection 2.20.2.2(a); Subsection 2.20.2.2(f); Section 2.20.3; Section 2.20.4: Section 2.20.9.3.4; and Section 2.20.9.5.4.

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Inspection Transfer Switch: Each Applicant shall conditionally hold permanent variance from certain requirements of the following section 3141, incorporated section of ASME A17.1-2004, to the extent variance is necessary to having the requisite inspection transfer switch located elsewhere than a machine room, within a Security Group I enclosure built into an upper floor landing door jam, or within other readily accessible and secure space shared with the motion controller outside the hoistway: Section 2.26.1.4.4.

Seismic Safety Switch Placement: Each Applicant shall conditionally hold permanent variance from certain requirements of the following section 3141, incorporated section of ASME A17.1-2004, to the limited extent variance is necessary to having the requisite seismic reset switch located elsewhere than a machine room, within a Security Group I enclosure built into an upper floor landing door jam, or within other readily accessible and secure space shared with the motion controller outside the hoistway: Section 8.4.10.1.1.

Car Top Railing: Each Applicant shall conditionally hold permanent variance from certain requirements of the following section 3141, incorporated section of ASME A17.1-2004, to the limited extent variance is necessary to provide for the below specified inseting of the subject elevator's top of car railing: Section 2.14.1.7.1.

Governor Rope and Sheave: Each Applicant shall conditionally hold permanent variance from certain requirements of the following section 3141, incorporated section of ASME A17.1-2004, to the limited extent variance is necessary to allow for the below specified governor rope and governor sheave parameters: Section 2.18.7.4.

Further Conditions and Limitations:

1. The elevator suspension system shall comply to the following:
 - 1.1. The suspension traction media (STM) members and their associated fastenings shall conform to the applicable requirements of ASME A17.1-2013, sections:
 - 2.20.4.3 – Minimum Number of Suspension Members
 - 2.20.3 – Factor of Safety
 - 2.20.9 – Suspension Member Fastening
 - 1.1.1 Additionally, STMs shall meet or exceed all requirements of ASME 17.6-2010, Standard for Elevator Suspension, Compensation, and Governor Systems, Part 3 Noncircular Elastomeric Coated Steel Suspension Members for Elevators.

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- 1.2. The Applicant shall not utilize the elevator unless the manufacturer has written procedures for the installation, maintenance, inspection and testing of the STM members and fastenings and related monitoring and detection systems and criteria for STM replacement, and the Applicant shall make those procedures and criteria available to the Certified Competent Conveyance Mechanic (CCCM) at the location of the elevator, and to the Division of Occupational Safety and Health (Division) upon request.
- 1.3. STM member mandatory replacement criteria shall include:
 - 1.3.1 Any exposed wire, strand or cord;
 - 1.3.2 Any wire, strand or cord breaks through the elastomeric coating;
 - 1.3.3 Any evidence of rouging (steel tension element corrosion) on any part of the elastomeric coated steel suspension member;
 - 1.3.4 Any deformation in the elastomeric suspension member such as, but not limited to, kinks or bends.
- 1.4. Traction drive sheaves must have a minimum diameter of 72 mm. The maximum speed of STM members running on 72 mm, 87 mm and 125 mm drive sheaves shall be no greater than 2.5 m/s, 6.0 m/s and 8.0 m/s respectively.
- 1.5. If any one STM member needs replacement, the complete set of suspension members on the elevator shall be replaced. Exception: If a new suspension member is damaged during installation, and prior to any contemporaneously installed STM having been placed into service, it is permissible to replace the individual damaged suspension member. STM members that have been installed on another installation shall not be re-used.
- 1.6. A traction loss detection means shall be provided that conforms to the requirements of ASME A17.1-2013, Section 2.20.8.1. The means shall be tested for correct function annually in accordance with ASME A17.1-2013, section 8.6.4.19.12.
- 1.7. A broken suspension member detection means shall be provided that conforms to the requirements of ASME A17.1-2013, Section 2.20.8.2. The means shall be tested for correct function annually in accordance with ASME A17.1-2013, section 8.6.4.19.13(a).
- 1.8. An elevator controller integrated bend cycle monitoring system shall monitor actual STM bend cycles, by means of continuously counting, and storing in

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nonvolatile memory, the number of trips that the STM makes traveling, and thereby being bent, over the elevator sheaves. The bend cycle limit monitoring means shall automatically stop the car normally at the next available landing before the bend cycle correlated residual strength of any single STM member drops below 80 percent of full rated strength. The monitoring means shall prevent the car from restarting. Notwithstanding any less frequent periodic testing requirement per Addendum 1 (Division Circular Letter), the bend cycle monitoring system shall be tested semi-annually in accordance with the procedures required per above Conditions 1.2, and 1.3.

- 1.9. Each elevator shall be provided with a device that electronically detects a reduction in residual strength of each STM member. The device shall be in compliance with Division Circular Letter E-10-04, a copy of which is attached hereto as Addendum 1, and incorporated herein by reference.
 - 1.10. The elevator crosshead data plate shall comply with the requirements of ASME A17.1-2013, Section 2.20.2.1.
 - 1.11. A suspension means data tag shall be provided that complies with the requirements of ASME A17.1-2013, Section 2.20.2.2.
 - 1.12. Comprehensive visual inspections of the entire length of each and all installed suspension members, in conformity with above Conditions 1.2 and 1.3 specified criteria, shall be conducted and documented every six months by a CCCM.
 - 1.13. The Applicant shall be subject to the requirements per hereto attached, and inhere incorporated, Addendum 2, "Suspension Means Replacement Reporting Condition."
 - 1.14. Records of all tests and inspections shall be maintenance records subject to ASME A17.1-2004, Sections 8.6.1.2, and 8.6.1.4, respectively.
2. Inspection Transfer switch and Seismic Reset switch placement and enclosure shall comply with the following:
 - 2.1. If the inspection transfer switch required by ASME A17.1-2004, Rule 2.26.1.4.4, does not reside in a machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the control/machinery room/space containing the elevator's control equipment in an enclosure secured by a lock openable by a Group 1 security key. The enclosure is to remain locked at all times when not in use.

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- 2.2. If the seismic reset switch does not reside in the machine room, that switch shall not reside in the elevator hoistway. The switch shall reside in the control/machinery room/space containing the elevator's control equipment in an enclosure secured by a lock openable by a Group 1 security key. The enclosure is to remain locked at all times when not in use.
3. Any and all inset car top railing shall comply with the following:
 - 3.1. Serviceable equipment shall be positioned so that mechanics and inspectors do not have to stand on or climb over the railings to perform adjustments, maintenance, repairs or inspections. The Applicant shall not permit anyone to stand or climb over the car top railing.
 - 3.2. The distance that the railing can be inset shall be limited to not more than 6 inches.
 - 3.3. All exposed areas of the car top outside the car top railing where the distance from the railing to the edge of the car top exceeds 2 inches, shall be beveled with metal, at an angle of not less than 75 degrees with the horizontal, from the mid or top rail to the outside of the car top, such that no person or object can stand, sit, kneel, rest, or be placed in the exposed areas.
 - 3.4. The top surface of the beveled area and/or car top outside the railing, shall be clearly marked. The markings shall consist of alternating 4 inch diagonal red and white stripes.
 - 3.5. The applicant shall provide durable signs with lettering not less than 1/2 inch on a contrasting background on each inset railing; each sign shall state:

CAUTION
STAY INSIDE RAILING
NO LEANING BEYOND RAILING
NO STEPPING ON, OR BEYOND, RAILING
 - 3.6. The Group IV requirements for car top clearances shall be maintained (car top clearances outside the railing will be measured from the car top and not from the required bevel).
4. The elevator shall be serviced, maintained, adjusted, tested, and inspected only by CCCM having been trained, and competent, to perform those tasks on the Schindler Model 3300 elevator system in accordance with written procedures and criteria, including as required per above Conditions 1.2, and 1.3.

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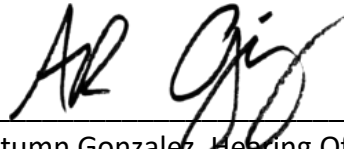
Schindler Model 3300 Elevators w/variant Gov. Rope & Sheaves

Hearing Date: April 21, 2021

5. The speed governor rope and sheaves shall comply with the following:
 - 5.1. The governor shall be used in conjunction with a steel 6 mm (0.25 in.) diameter governor rope with 6-strand, regular lay construction.
 - 5.2. The governor rope shall have a factor of safety of 8 or greater as related to the strength necessary to activate the safety.
 - 5.3. The governor sheaves shall have a pitch diameter of not less than 200 mm (7.87 in.).
6. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division, and all applicable requirements met, including conditions of this permanent variance, prior to a Permit to Operate the elevator being issued. The elevator shall not be placed in service prior to the Permit to Operate being issued by Division.
7. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way and to the same extent that employees and authorized representatives are to be notified of docketed permanent variance applications pursuant to California Code of Regulations, Title 8, Sections 411.2, and 411.3.
8. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division, or by the Board on its own motion, in procedural accordance with sections 411, et. seq. of the Board's regulations.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

ADDENDUM 1

October 6, 2010

CIRCULAR LETTER E-10-04

TO: Installers, Manufacturers of Conveyances and Related Equipment and, Other Interested Parties

SUBJECT: Coated Steel Belt Monitoring

The Elevator Safety Orders require routine inspection of the suspension means of an elevator to assure its safe operation.

The California Labor Code Section 7318 allows the Division to promulgate special safety orders in the absence of regulation.

As it is not possible to see the steel cable suspension means of a Coated Steel Belt, a monitoring device which has been accepted by the Division is required on all Coated Steel Belts which will automatically stop the car if the residual strength of any belt drops below 60%. The Device shall prevent the elevator from restarting after a normal stop at a landing.

The monitoring device must be properly installed and functional. A functioning device may be removed only after a determination has been made that the residual strength of each belt exceeds 60%. These findings and the date of removal are to be conspicuously documented in the elevator machine room. The removed device must be replaced or returned to proper service within 30 days.

If upon routine inspection, the monitoring device is found to be in a non-functional state, the date and findings are to be conspicuously documented in the elevator machine room.

If upon inspection by the Division, the monitoring device is found to be non-functional or removed, and the required documentation is not in place, the elevator will be removed from service.

If the device is removed to facilitate belt replacement, it must be properly installed and functional before the elevator is returned to service.

A successful test of the device's functionality shall be conducted once a year.

This circular does not preempt the Division from adopting regulations in the future, which may address the monitoring of Coated Steel Belts or any other suspension means.

This circular does not create an obligation on the part of the Division to permit new conveyances utilizing Coated Steel Belts.

Debra Tudor
Principal Engineer
DOSH-Elevator Unit HQS

ADDENDUM 2

Suspension Means – Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings.

Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Place, Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.
 - f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement

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Hearing Date: April 21, 2021

- and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
- g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.
 - h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in item 2a above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
)
KONE Monospace 500 Elevators)
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

In the Matter of Application for Permanent Variance Regarding: KONE Monospace 500 Elevators (Group IV)	OSHSB File Nos.: Per Section A.1 Grid Below PROPOSED DECISION <hr style="width: 20%; margin-left: 0;"/> Hearing Date: April 21, 2021
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A. Subject Matter:

- Each below listed applicant (“Applicant”) applied for a permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
21-V-055	Aram Shorvoghlian	10652 Whipple St. North Hollywood, Ca	1
21-V-056	Associates Equity Funds	519 South Broadway Los Angeles, CA	1
21-V-057	Pulte Home Company, LLC	2850 Fifth Street Alameda, CA	1
21-V-062	TP SPE LLC	435 North Mary Ave. Sunnyvale, CA	2

- The subject safety order requirements are set out within section 3141, incorporating ASME A17.1-2004, Sections 2.18.5.1 and 2.20.4.

B. Procedural:

- This hearing was held on April 21, 2021, in Sacramento, California and via teleconference, by delegation of the Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.

2. At the hearing, Manish Sablok, with KONE, Inc., appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”), and Michael Nelmidia appeared on behalf of Board staff in a technical advisory capacity apart from the Board.
3. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: permanent variance applications per Section A.1 table as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Pending Application Memorandum as PD-3, Division Review of Application as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s rulemaking records and variance decisions concerning the safety order requirements from which variance is sought. Upon close of hearing on April 21, 2021, the record closed and the matter was taken under submission by the Hearing Officer.

C. Findings of Fact—Based on the record of this proceeding, the Board finds the following:

1. Each respective Applicant intends to utilize the KONE Inc. Monospace 500 type elevator, in the quantity, at the location, specified per the above Section A.1 table.
2. The installation contract for this elevator was or will be signed on or after May 1, 2008, thus making the elevator subject to the Group IV Elevator Safety Orders.
3. Each Applicant proposes to use hoisting ropes that are 8 mm in diameter which also consist of 0.51 mm diameter outer wires, in variance from the express requirements of ASME A17.1-2004, Section 2.20.4.
4. In relevant part, ASME A17.1-2004, Section 2.20.4 states:

2.20.4 Minimum Number and Diameter of Suspension Ropes

...The minimum diameter of hoisting and counterweight ropes shall be 9.5 mm (0.375 in.). Outer wires of the ropes shall be not less than 0.56 mm (0.024 in.) in diameter.

5. An intent of the requirement of ASME A17.1-2004, Section 2.20.4, is to ensure that the number, diameter, and construction of suspension ropes are adequate to provided safely robust and durable suspension means over the course of the ropes’ foreseen service life.

Proposed Variance Decision
KONE Monospace 500 Elevators
Hearing Date: April 21, 2021

6. KONE has represented to Division and Board staff, having established an engineering practice for purposes of Monospace 500 elevator design, of meeting or exceeding the minimum factor of safety of 12 for 8 mm suspension members, as required in ASME A17.1-2010, Section 2.20.3—under which, given that factor of safety, supplemental broken suspension member protection is not required.
7. Also, each Applicant proposes as a further means of maintaining safety equivalence, monitoring the rope in conformity with the criteria specified within the *Inspector's Guide to 6 mm Diameter Governor and 8 mm Diameter Suspension Ropes for KONE Elevators* (per Application attachment "B", or as thereafter revised by KONE subject to Division approval).
8. In addition, each Applicant has proposed to utilize 6 mm diameter governor ropes in variance from section 3141, incorporated ASME A17.1-2004, Section 2.18.5.1.
9. ASME A17.1-2004, Section 2.18.5.1, specifies, in relevant part:

2.18.5.1 Material and Factor of Safety.

... [Governor ropes] not less than 9.5 mm (0.375 in.) in diameter. The factor of safety of governor ropes shall be not less than 5...

10. The Board takes notice of section 3141.7, subdivision (a)(10):

A reduced diameter governor rope of equivalent construction and material to that required by ASME A17.1-2004, is permissible if the factor of safety as related to the strength necessary to activate the safety is 5 or greater;

11. Applicants propose use of 6mm governor rope having a safety factor of 5 or greater, in conformity with section 3141.7, subdivision (a)(10), the specific parameters of which, being expressly set out within the Elevator Safety Orders, take precedence over more generally referenced governor rope diameter requirements per ASME A17.1-2004, Section 2.18.5.1. Accordingly, the governor rope specifications being presently proposed, inclusive of a factor of safety of 5 or greater, would comply with current Elevator Safety Orders requirements, and therefore not be subject to issuance of permanent variance.
12. Absent evident diminution in elevator safety, over the past decade the Board has issued numerous permanent variances for use in KONE (Ecospace) elevator systems of 8 mm diameter suspension rope materially similar to that presently proposed (e.g. OSHSB File Nos. 06-V-203, 08-V-245, and 13-V-303).

13. As noted by the Board in OSHSB File Nos. 18-V-044, and 18-V-045, Decision and Order Findings, subpart B.17 (hereby incorporated by reference), the strength of wire rope operating as an elevator's suspension means does not remain constant over its years of projected service life. With increasing usage cycles, a reduction in the cross-sectional area of the wire rope normally occurs, resulting in decreased residual strength. This characteristic is of particular relevance to the present matter because, as also noted by Board staff, decreasing wire rope diameter is associated with a higher rate of residual strength loss. This foreseeable reduction in cross-sectional area primarily results from elongation under sheave rounding load, as well as from wear, and wire or strand breaks. However, these characteristics need not compromise elevator safety when properly accounted for in the engineering of elevator suspension means, and associated components.
14. The presently proposed wire rope is Wuxi Universal steel rope Co LTD. 8 mm 8x19S+8x7+PP, with a manufacturer rated breaking strength of 35.8 kN, and an outer wire diameter of less than 0.56 mm, but not less than 0.51 mm. Both Board staff and Division safety engineers have scrutinized the material and structural specifications, and performance testing data, of this particular proposed rope, and conclude it will provide for safety equivalent to ESO compliant 9.5 mm wire rope, with 0.56 mm outer wire (under conditions of use included within the below Decision and Order).
15. The applicant supplies tabulated data regarding the "Maximum Static Load on All Suspension Ropes." To obtain the tabulated data, the applicant uses the following formula derived from ASME A17.1 2004, Section 2.20.3:

$$W = (S \times N) / f$$

where

W = maximum static load imposed on all car ropes with the car and its rated load at any position in the hoistway

N = number of runs of rope under load. For 2:1 roping, N shall be two times the number of ropes used, etc.

S = manufacturer's rated breaking strength of one rope

f = the factor of safety from Table 2.20.3

16. ASME A17.1-2010 Sections 2.20.3 and 2.20.4 utilize the same formula, but provide for use of suspension ropes having a diameter smaller than 9.5 mm, under specified conditions, key among them being that use of ropes having a diameter of between 8 mm to 9.5 mm be engineered with a factor of safety of 12 or higher. This is a higher minimum factor of safety than that proposed by Applicant, but a minimum

recommended by both Board staff and Division as a condition of variance necessary to the achieving of safety equivalence to 9.5 mm rope.

17. Board staff and Division are in accord with Applicant, in proposing as a condition of safety equivalence, that periodic physical examination of the wire ropes be performed to confirm the ropes continue to meet the criteria set out in the (Application attachment) *Inspector's Guide to 6 mm Diameter Governor and 8 mm Diameter Suspension Ropes for KONE Elevators*. Adherence to this condition will provide an additional assurance of safety equivalence, regarding smaller minimum diameter suspension rope outer wire performance over the course of its service life.
18. Both Board staff, and Division, by way of written submissions to the record (Exhibits PD-3 and PD-4 respectively), and stated positions at hearing, are of the well informed opinion that grant of permanent variance, as limited and conditioned per the below Decision and Order will provide employment, places of employment, and subject conveyances, as safe and healthful as would prevail given non-variant conformity with the Elevator Safety Order requirements from which variance has been requested.

D. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted; and (2) a preponderance of the evidence establishes that each Applicants proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of the safety regulations from which variance is being sought.

E. Decision and Order:

Each Application being the subject of this proceeding, per above Section A.1 table, is conditionally GRANTED, to the extent that each such Applicant shall be issued permanent variance from section 3141 incorporated ASME A17.1-2004, Section 2.20.4, in as much as it precludes use of suspension rope of between 8 mm and 9.5 mm, or outer wire of between 0.51 mm and 0.56 mm in diameter, at such locations and numbers of Group IV KONE Monospace 500 elevators identified in each respective Application, subject to the following conditions:

1. The diameter of the hoisting steel ropes shall be not less than 8 mm (0.315 in) diameter and the roping ratio shall be two to one (2:1).

Proposed Variance Decision
KONE Monospace 500 Elevators
Hearing Date: April 21, 2021

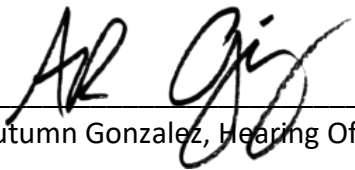
2. The outer wires of the suspension ropes shall be not less than 0.51 mm (0.02 in.) in diameter.
3. The number of suspension ropes shall be not fewer than those specified per hereby incorporated Decision and Order Appendix 1 Table.
4. The ropes shall be inspected annually for wire damage (rouge, valley break etc.) in accordance with "KONE Inc. Inspector's Guide to 6 mm diameter and 8 mm diameter steel ropes for KONE Elevators" (per Application Exhibit B, or as thereafter amended by KONE subject to Division approval).
5. A rope inspection log shall be maintained and available in the elevator controller room / space at all times.
6. The elevator rated speed shall not exceed those speeds specified per the Decision and Order Appendix 1 Table.
7. The maximum suspended load shall not exceed those weights (plus 5%) specified per the Decision and Order Appendix 1 Table.
8. The opening to the hoistway shall be effectively barricaded when car top inspection, maintenance, servicing, or testing of the elevator equipment in the hoistway is required. If the service personnel must leave the area for any reason, the hoistway and control room doors shall be closed.
9. The installation shall meet the suspension wire rope factor of safety requirements of ASME A17.1-2013 Section 2.20.3.
10. Any Certified Qualified Conveyance Company performing inspections, maintenance, servicing or testing the elevators shall be provided a copy of this variance decision.
11. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division and a "Permit to Operate" issued before the elevator is placed in service.
12. The Applicant shall comply with suspension means replacement reporting condition per hereby incorporated Decision and Order Appendix 2.
13. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way and to the same extent that employees and authorized representatives are to be notified of docketed permanent variance applications pursuant to sections 411.2 and 411.3.

Proposed Variance Decision
KONE Monospace 500 Elevators
Hearing Date: April 21, 2021

14. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in accordance with the Board's procedural regulations.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

Appendix 1

Monospace 500 Suspension Ropes Appendix 1 Table				
OSHSB File No.	Elevator ID	Minimum Quantity of Ropes (per Condition 3)	Maximum Speed in Feet per Minute (per Condition 6)	Maximum Suspended Load (per Condition 7)
21-V-055	1	7	150	12,247
21-V-056	1	6	350	8780
21-V-057	1	8	200	13,208
21-V-062	1	7	200	11,556
21-V-062	2	7	200	11556

Appendix 2

Suspension Means Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings. Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Place, Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.
 - f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.

Proposed Variance Decision
KONE Monospace 500 Elevators
Hearing Date: April 21, 2021

- g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.
 - h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in above Appendix 2, Section 2, Subsection (a), above.

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
)
Mitsubishi Elevators (Group IV))
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p style="text-align: center;">Mitsubishi Elevators (Group IV)</p>	<p>OSHSB File Nos.: See Section A.1 Table</p> <p style="text-align: center;"><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
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A. Procedural Matters:

- Each below listed applicant (“Applicant”) has applied for permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
21-V-058	KR Oyster Point I, LLC	350 Oyster Point Blvd. South San Francisco, CA	5
21-V-059	KR Oyster Point I, LLC	352 Oyster Point Blvd. South San Francisco, CA	4
21-V-060	KR Oyster Point I, LLC	354 Oyster Point Blvd. South San Francisco, CA	5

- The safety orders at issue are set forth in the prefatory portion of the Decision and Order. This proceeding is conducted in accordance with Labor Code section 143, and section 401, et. seq. of the Occupational Safety and Health Standards Board’s (“Board”) procedural regulations.
- This hearing was held on April 21, 2021, in Sacramento, California and via teleconference, by delegation of the Board, with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.
- At the hearing, Carolina Castaneda, with Mitsubishi Electric, Elevator Division, appeared on behalf of each Applicant, Mark Wickens and David Morris appeared on behalf of the

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

*Proposed Variance Decision
Mitsubishi Elevators (Group IV)
Hearing Date: April 21, 2021*

Division of Occupational Safety and Health (“Division”), and Michael Nelmidia appeared on behalf of Board staff in a technical advisory role apart from the Board.

5. At the hearing, documentary and oral evidence was received, and by stipulation of all parties, documents were accepted into evidence: each permanent variance application per Section A table as Exhibit PD-1; Notice of Hearing as PD-2; Board staff Pending Application Memorandum as PD-3; Division Review of Application report as PD-4; Review Draft 1 Proposed Decision as PD-5; and Official Notice taken of the Board’s rulemaking records and variance decisions concerning the safety order requirements from which variance is requested. At the close of hearing on April 21, 2021, the record was closed and the matter taken under submission by the Hearing Officer.

B. Findings of Fact:

Based on the record of this proceeding, the Board makes the following findings of fact:

1. Each Section A table specified Applicant intends to utilize Mitsubishi elevators at the location and in the number stated in the table in Item A. The installation contracts for these elevators were signed on or after May 1, 2008, thus making the elevators subject to the Group IV Elevator Safety Orders.
2. The Board takes official notice and incorporates herein, Subsections D.3 through D.5 of the February 20, 2014, Decision of the Board in OSHSB Permanent Variance File No. 13-V-270.
3. As reflected in the record of this matter, including Board staff Pending Application for Permanent Variance Opinion Letter as PD-3, Division evaluation as PD-4, and testimony at hearing, it is the professionally informed opinion of Board staff and Division, that grant of requested variance, subject to conditions and limitations in substantial conforming with those set out per below Decision and Order, will provide Occupational Safety and Health equivalent or superior to that provided by the safety order requirements from which variance is sought.

C. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with the statutory and regulatory requirements that must be met before an application for permanent variance may be conditionally granted, and (2) a preponderance of the evidence establishes that each Applicants proposal, subject to all conditions and limitations set forth

*Proposed Variance Decision
Mitsubishi Elevators (Group IV)
Hearing Date: April 21, 2021*

in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of the Elevator Safety Orders from which variance is being sought.

D. Decision and Order:

As of such date as the Board adopts this Proposed Decision, each Application for Permanent Variance listed in the above Section A.1 table, is conditionally GRANTED to the extent each Applicant of record shall have permanent variance from California Code of Regulations, Title 8, Section 3141 [ASME A17.1-2004, Sections 2.10.2.2 (only to the extent necessary to permit the intermediate rail to be located at a point other than halfway between the top rail and the surface on which the railing is installed), 2.10.2.4 (only to the extent necessary to permit a bevel sloping that conforms with the variance conditions) and 2.14.1.7.1 (only to the extent necessary to permit the car top railing to be inset to clear obstructions when the conveyance is elevated to perform work on the machine and/or governor). The variance applies to the location and number of elevators stated in the Section A.1 table, and the variance is subject to the above limitations and following conditions:

1. The car top railing may be inset only to the extent necessary to clear obstructions when the conveyance is located at the top landing to perform work on the machine and/or governor.
2. Serviceable equipment shall be positioned so that mechanics, inspectors, and others working on the car top can remain positioned on the car top within the confines of the railings and do not have to climb on or over railings to perform adjustment, maintenance, minor repairs, inspections, or similar tasks. Persons performing those tasks are not to stand on or climb over railing, and those persons shall not remove handrails unless the equipment has been secured from movement and approved personal fall protection is used.
3. All exposed areas outside the car top railing shall preclude standing or placing objects or persons which may fall, and shall be beveled from an intermediate or bottom rail to the outside of the car top.
4. The top surface of the beveled area shall be clearly marked. The markings shall consist of alternating 4-inch red and white diagonal stripes.
5. The Applicant shall provide a durable sign with lettering not less than ½-inch high on a contrasting background. The sign shall be located on the inset top railing; the sign shall be visible from the access side of the car top, and the sign shall state:

CAUTION

DO NOT STAND ON OR CLIMB OVER RAILING.
PERSONNEL ARE PROHIBITED FROM REMOVING HANDRAIL
UNLESS THE EQUIPMENT HAS BEEN SECURED FROM MOVEMENT
AND APPROVED PERSONAL FALL PROTECTION IS USED.

6. The Group IV requirements for car top clearances shall be maintained (car top clearances outside the railing will be measured from the car top and not from the required bevel).
7. A mechanical means (e.g., locking bar mechanism) that will secure the car to the guide rail to prevent unintended movement shall be provided and used during machine and/or governor car-top work. The mechanical means (e.g., locking bar mechanism) shall have a safety factor of not less than 3.5 for the total unbalanced load.
8. An electrical switch or a lockout/tagout procedure shall be provided that will remove power from the driving machine and brake when the mechanical means (e.g., locking bar mechanism) is engaged.
9. In order to inhibit employees from working outside the car top railing, sections shall not be hinged and they shall be installed by means that will inhibit (but not necessarily completely preclude) removal. The Applicant shall ensure that all persons performing work that requires removal of any part of the car top railing are provided with fall protection that is appropriate and suitable for the assigned work. That fall protection shall consist of a personal fall arrest system or fall restraint system that complies with California Code of Regulations, Title 8, Section 1670.
10. The bevel utilized by the Applicant in accordance with the variance granted from ASME A17.1-2004, Section 2.10.2.4 shall slope at not less than 75 degrees from the horizontal to serve as the toe board; however, that slope may be reduced to a minimum of 40 degrees from the horizontal as may be required for sections where machine encroachment occurs.
11. If the Applicant directs or allows its employees to perform tasks on the car top, the Applicant shall develop, implement, and document a safety training program that shall provide training to Applicant employees. Components of the training shall include, but not necessarily be limited to, the following: car blocking procedures; how examination, inspection, adjustment, repair, removal and replacement of elevator components are to be performed safely, consistent with the requirements of the variance conditions; applicable provisions of the law and other sources of safety practices regarding the

*Proposed Variance Decision
Mitsubishi Elevators (Group IV)
Hearing Date: April 21, 2021*

operation of the elevator. A copy of the training program shall be located in the control room of each elevator that is the subject of this variance, and a copy of the training program shall be attached to a copy of this variance that shall be retained in any building where an elevator subject to this variance is located. The Applicant shall not allow Certified Qualified Conveyance Company (CQCC) or other contractor personnel to work on the top of any elevator subject to this variance unless the Applicant first ascertains from the CQCC or other contractor that the personnel in question have received training equivalent to, or more extensive than, the training components referred to in this condition.

12. Any CQCC performing inspections, maintenance, servicing, or testing of the elevators shall be provided a copy of this variance decision.
13. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division, and a Permit to Operate shall be issued before the elevator is placed in service.
14. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way and to the same extent that employees and authorized representatives are to be notified of docketed permanent variance applications pursuant to sections 411.2 and 411.3.
15. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division, or by the Board on its own motion, in the manner prescribed for its issuance.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento, California 95833
(916) 274-5721

In the Matter of Application for Permanent)
Variance Regarding:)
)
KONE Ecospace Elevators (Group IV))
Suspension Rope Diameters)
)
_____)

OSHSB FILE No.: see grid in Item A of
Proposed Decision Dated: April 21, 2021

DECISION

The Occupational Safety and Health Standards Board hereby adopts the attached PROPOSED DECISION by Autumn Gonzalez, Hearing Officer.

DAVID THOMAS, Chairman

BARBARA BURGEL, Member

KATHLEEN CRAWFORD, Member

DAVID HARRISON, Member

NOLA KENNEDY, Member

CHRIS LASZCZ-DAVIS, Member

LAURA STOCK, Member

OCCUPATIONAL SAFETY AND HEALTH STANDARDS
BOARD

Date of Adoption: May 20, 2021

THE FOREGOING VARIANCE DECISION WAS ADOPTED ON THE DATE INDICATED ABOVE. IF YOU ARE DISSATISFIED WITH THE DECISION, A PETITION FOR REHEARING MAY BE FILED BY ANY PARTY WITH THE STANDARDS BOARD WITHIN TWENTY (20) DAYS AFTER SERVICE OF THE DECISION. YOUR PETITION FOR REHEARING MUST FULLY COMPLY WITH THE REQUIREMENTS OF CALIFORNIA CODE OF REGULATIONS, TITLE 8, SECTIONS 427, 427.1 AND 427.2.

Note: A copy of this Decision must be posted for the Applicant's employees to read, and/or a copy thereof must be provided to the employees' Authorized Representatives.

BEFORE THE
 OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD
 DEPARTMENT OF INDUSTRIAL RELATIONS
 STATE OF CALIFORNIA

<p>In the Matter of Application for Permanent Variance Regarding:</p> <p style="text-align: center;">KONE Ecospace Elevators (Group IV—Suspension Rope Diameter)</p>	<p>OSHSB File Nos.: Per Section A.1 table, below</p> <p style="text-align: center;"><u>PROPOSED DECISION</u></p> <p>Hearing Date: April 21, 2021</p>
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A. Procedural Matters:

- Each below listed applicant (“Applicant”) has applied for a permanent variance from provisions of the Elevator Safety Orders, found at title 8 of the California Code of Regulations¹, with respect to a conveyance, or conveyances, in the listed quantity, at the listed location:

Variance No.	Applicant Name	Variance Location Address	No. of Elevators
21-V-082	Google	225 Humboldt Court Sunnyvale, CA	2
21-V-083	Google	227 Humboldt Court Sunnyvale, CA	2
21-V-084	Google	242 Humboldt Court Sunnyvale, CA	2
21-V-085	Google	244 Humboldt Court Sunnyvale, CA	2

- The safety orders at issue are set forth in the prefatory portion of the Decision and Order.
- This proceeding is conducted in accordance with Labor Code section 143.
- This hearing was held on April 21, 2021, in Sacramento, California via teleconference, by delegation of the Occupational Safety and Health Standards Board (“Board”), with Hearing Officer Autumn Gonzalez, both presiding and hearing the matter on its merit, as a basis of proposed decision to be advanced to the Board for its consideration, in accordance with section 426.

¹ Unless otherwise noted, all references are to California Code of Regulations, title 8.

Proposed Variance Decision

KONE Ecospace Elevators (Group IV—Suspension Rope Diameter)

Hearing Date: April 21, 2021

5. At the hearing, Manish Sablok, with KONE, Inc., appeared on behalf of each Applicant; Mark Wickens and David Morris appeared on behalf of the Division of Occupational Safety and Health (“Division”), Michael Nelmda appeared on behalf of Board staff in a technical advisory capacity apart from the Board.
6. Documentary and oral evidence was received at the hearing, and by stipulation of all parties, documents were admitted into evidence: permanent variance applications per Section A.1 table as Exhibit PD-1, Notice of Hearing as Exhibit PD-2, Board staff Review of Application Memorandum as PD-3, Division Review of Application Memorandum as PD-4, Review Draft 1 Proposed Decision as PD-5, and official notice taken of the Board’s files, records, recordings and decisions regarding Kone conveyances. Upon close of hearing on April 21, 2021, the record closed and the matter was taken under submission by the Hearing Officer.

B. Findings and Basis:

1. Each Applicant intends to utilize KONE Inc. EcoSpace elevators at the location and in the numbers set forth in above Section A.1, table. The installation contracts for these elevators were signed or will be signed on or after May 1, 2008, thus making the elevator subject to the Group IV Elevator Safety Orders.
2. Conditions No. 2 and No. 6 state requirements for the number of suspension ropes and total suspended load for each elevator that is subject to this variance. Those requirements were determined in accordance with the rated capacities of the elevators. The Board incorporates by reference the findings of fact stated in Subsections 3 through 6, set forth in the “Findings of Fact” Section of the Proposed Decision adopted by the Board on February 19, 2009, regarding OSHSB File No. 08-V-181 and Section D, Subsection 4, of the Proposed Decision adopted by the Board on September 25, 2014 in OSHSB File No. 14-V-171.
3. Both Board staff and Division, by way of written submissions to the record (Exhibits PD-3 and PD-4 respectively), and positions stated at hearing, are of the well informed opinion that grant of requested permanent variance, as limited and conditioned per the below Decision and Order will provide employment, places of employment, and subject conveyances, as safe and healthful as would prevail given non-variant conformity with the Elevator Safety Order requirements from which variance has been requested.

C. Conclusive Findings:

The above stated procedural prerequisites, legal authority, and factual findings, as further supported by the documentary record and hearing testimony in this matter, provide a substantive and reasonable basis of conclusion that: (1) Each Applicant has complied with the statutory and regulatory requirements that must be met before an application for

Proposed Variance Decision

KONE Ecospace Elevators (Group IV—Suspension Rope Diameter)

Hearing Date: April 21, 2021

permanent variance may be conditionally granted, and (2) a preponderance of the evidence establishes that each Applicant's proposal, subject to all conditions and limitations set forth in the below Decision and Order, will provide equivalent safety and health to that which would prevail upon full compliance with the requirements of California Code of Regulation, Title 8, Elevator Safety Orders from which variance is being sought.

D. Decision and Order:

Each application for a permanent variance that is the subject of this proceeding is conditionally GRANTED to the extent, as of the date the Board adopts this Proposed Decision, each Applicant listed in the table set forth in above Section A.1 of this Proposed Decision shall have permanent variances from section 3141 [ASME A17.1-2004, Section 2.20.4 (insofar as it requires that the "minimum diameter of hoisting and counter-weight ropes shall be 9.5 mm (0.375 in.)" and that the outer wires of the ropes "shall be not less than 0.56mm (0.024 in.) in diameter")], regarding ropes and outer wires, for the location and numbers of elevator (so long as they are the Group IV KONE EcoSpace elevators that are the subject of these applications) set forth in the above Section A grid, subject to the following conditions:

1. The diameter of the hoisting steel ropes shall be not less than 8 mm (0.315 in), and the roping ratio shall be not less than four to one (4:1).
2. The number of suspension ropes for each elevator that is subject to this variance shall be not less than the number of suspension ropes stated for that elevator in Appendix 1 attached to this Proposed Decision; that appendix is incorporated herein by this reference.
3. The ropes shall be inspected not less than annually for wire damage (rouge, valley break, etc.) in accordance with "Kone, Inc. Inspector's Guide to 6 mm diameter and 8 mm diameter steel ropes for Kone Elevators."
4. A rope inspection log shall be maintained and available in the elevator controller room at all times.
5. The elevator rated speed shall not exceed 150 feet per minute.
6. The total suspended load for each elevator that is subject to this variance shall not exceed the total suspended load stated for that elevator specified in Appendix 1 to this Decision and Order (plus 5%).
7. The outer wires of the suspension ropes shall be not less than 0.51 mm in diameter.
8. The opening to the hoistway shall be effectively barricaded when car top inspection, maintenance, servicing, or testing of elevator equipment in the hoistway is required. If

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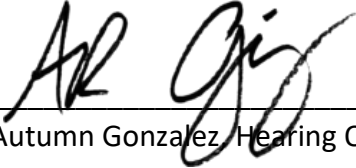
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service personnel must leave the area for any reason, the hoistway and control room doors shall be closed.

9. Any Certified Qualified Conveyance Company performing inspections, maintenance, servicing or testing of the elevators shall be provided a copy of this variance decision.
10. The Division shall be notified when the elevator is ready for inspection. The elevator shall be inspected by the Division and a “Permit to Operate” issued before the elevator is placed in service.
11. The Applicant shall be subject to the Suspension Means Replacement Reporting Condition stated in Appendix 2; that condition is incorporated herein by this reference.
12. The Applicant shall notify its employees or their authorized representative(s), or both, of this order in the same way that the Applicant was required to notify them of the docketed application for permanent variance per sections 411.2 and 411.3.
13. This Decision and Order shall remain in effect unless modified or revoked upon application by the Applicant, affected employee(s), the Division of Occupational Safety and Health, or by the Board on its own motion, in the manner prescribed for its issuance.

Pursuant to section 426, subdivision (b), the above, duly completed Proposed Decision, is hereby submitted to the Occupational Safety and Health Standards Board for consideration of adoption.

Dated: April 21, 2021



Autumn Gonzalez, Hearing Officer

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Appendix 1

File Number	Elevator ID	Minimum Number of Suspension Ropes	Maximum Rated Elevator Speed	Maximum Suspended Load (lbs.) [plus 5%]
21-V-082	1	6	150	8,978
21-V-082	2	6	150	8,978
21-V-083	1	6	150	8,978
21-V-083	2	6	150	8,978
21-V-084	1	6	150	8,978
21-V-084	2	6	150	8,978
21-V-085	1	6	150	8,978
21-V-085	2	6	150	8,978

Appendix 2

Suspension Means Replacement Reporting Condition

Beginning on the date the Board adopts this Proposed Decision and continuing for a period of two years, the Applicant shall report to the Division within 30 days any and all replacement activity performed on the elevator(s) pursuant to the requirements of ASME A17.1-2004, Section 8.6.3 involving the suspension means or suspension means fastenings. Further:

1. A separate report for each elevator shall be submitted, in a manner acceptable to the Division, to the following address (or to such other address as the Division might specify in the future): DOSH Elevator Unit, 2 MacArthur Place , Suite 700, Santa Ana, CA 92707, Attn: Engineering Section.
2. Each such report shall contain, but not necessarily be limited to, the following information:
 - a. The State-issued conveyance number, complete address, and OSHSB file number that identifies the permanent variance.
 - b. The business name, complete address, telephone number, and contact person of the elevator responsible party (presumably the Applicant or the subsequent holder of this variance).
 - c. The business name, complete address, telephone number, and Certified Qualified Conveyance Company (CQCC) certification number of the firm performing the replacement work.
 - d. The name (as listed on certification), Certified Competent Conveyance Mechanic (CCCM) certification number, certification expiration date, and signature of each CCCM performing the replacement work.
 - e. The date and time the elevator was removed from normal service for suspension replacement, the date and time the replacement work commenced, the date and time the replacement work was completed, and the date and time the elevator was returned to normal service.
 - f. A detailed description of, and clear color photographs depicting, (1) all the conditions that existed in the suspension components requiring their replacement and (2) any conditions that existed to cause damage or distress to the suspension components being replaced.
 - g. A detailed list of all elevator components adjusted, repaired, or replaced in conjunction with the suspension component replacement.
 - h. All information provided on the crosshead data plate per ASME A17.1-2004, Section 2.20.2.1, unless that ASME requirement is modified by the conditions of a variance that

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- pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
- i. For the suspension means being replaced, all information provided on the data tag required per ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - j. For the replacement suspension means, all information provided on the data tag required by ASME A17.1-2004, Section 2.20.2.2, unless that ASME requirement is modified by the conditions of a variance that pertains to the elevator in question, in which case, the information to be reported shall be the information required by the ASME provision as modified by the variance.
 - k. Any other information requested by the Division regarding the replacement of the suspension means or fastenings.
3. In addition to the submission of the report to the Division, the findings of any testing, failure analysis, or other engineering evaluations performed on any portion of the replaced suspension components, or other elevator components replaced in conjunction therewith, shall be submitted to the Division referencing the information contained in above Appendix 2, Section 2, Subsection (a), above.

Occupational Safety and Health Standards Board

Business Meeting
Legislative Update

Legislative Update
Prepared May 10, 2021, for the May 20, 2021
Meeting of the Occupational Safety and Health Standards Board

Summary of Changes

AB-2 Regulations: legislative review: regulatory reform. (2021-2022) **Update**

AB 7 Emergency ambulance employees: ~~subsidized~~ *multithreat body* protective gear. (2021-2022)
Update New language in italics

AB-29 State bodies: meetings. (2021-2022) **Update**

AB-62 Income taxes: credits: costs to comply with COVID-19 regulations. (2021-2022) **No Update**

AB-73 Employment safety: agricultural workers: wildfire smoke. (2021-2022) **Update**

AB-257 Fast food industry: working standards. (2021-2022) **Update New language in italics**

AB-339 ~~State and~~ Local government: open meetings. (2021-2022) **Removed**

AB-420 Public health: amusement parks and COVID-19. (2021-2022) **No Update**

AB-473 California Public Records Act.(2021-2022) **NEW. Monitoring for impacts.**

AB-474 California Public Records Act: conforming revisions. (2021-2022) **Update**

AB-701 Warehouse distribution centers. (2021-2022) **Update New language in italics**

AB-783 Surface mines: safety regulation. (2021-2022) **NEW. Monitoring for impacts.**

AB-885 Bagley-Keene Open Meeting Act: teleconferencing. (2021-2022) **No Update**

AB-893 Emergency regulations: Division of Occupational Safety and Health: State Department of Public Health. (2021-2022) **No Update**

AB-1175 Division of Occupational Safety and Health: inspections and investigations: advance notice. (2021-2022) **NEW. Monitoring for impacts.**

AB-1291 State bodies: open meetings. (2021-2022) **Update**

SB-46 Employment: contact tracing and safety policies: COVID-19. (2021-2022) **Removed**

SB-321 Employment safety standards: household domestic services. (2021-2022) **Update New language in italics**

SB-410 Occupational safety and health: regulations. (2021-2022) **Update**

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AB-2 Regulations: legislative review: regulatory reform. (2021-2022)
(Fong)

Date	Action
04/29/21	From committee: Do pass and re-refer to Com. on APPR. (Ayes 7. Noes 0.) (April 28). Re-referred to Com. on APPR.

Summary:

AB 2, as introduced, Fong. Regulations: legislative review: regulatory reform.

The Administrative Procedure Act governs the procedure for the adoption, amendment, or repeal of regulations by state agencies and for the review of those regulatory actions by the Office of Administrative Law. That act requires an agency, prior to submitting a proposal to adopt, amend, or repeal an administrative regulation, to determine the economic impact of that regulation, in accordance with certain procedures. The act defines a major regulation as a regulation, as specified, that will have an economic impact on California business enterprises and individuals in an amount exceeding \$50,000,000, as estimated by the agency. The act requires the office to transmit a copy of a regulation to the Secretary of State for filing if the office approves the regulation or fails to act on it within 30 days. The act provides that a regulation or an order of repeal of a regulation becomes effective on a quarterly basis, as prescribed, except in specified instances.

This bill would require the office to submit to each house of the Legislature for review a copy of each major regulation that it submits to the Secretary of State. The bill would add another exception to those currently provided that specifies that a regulation does not become effective if the Legislature enacts a statute to override the regulation.

The Administrative Procedure Act requires the Office of Administrative Law and a state agency proposing to adopt, amend, or repeal a regulation to review the proposed changes for, among other things, consistency with existing state regulations.

This bill would require each state agency to, on or before January 1, 2023, review that agency's regulations, identify any regulations that are duplicative, overlapping, inconsistent, or out of date, to revise those identified regulations, as provided, and report to the Legislature and Governor, as specified. The bill would repeal these provisions on January 1, 2024.

Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.

AB-2

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AB-7 Emergency ambulance employees: subsidized protective gear. (2021-2022)
 (Rodriguez)

Date	Action
04/26/21	From committee: Do pass and re-refer to Com. on APPR. (Ayes 6. Noes 0.) (April 22). Re-referred to Com. on APPR.
04/14/21	Re-referred to Com. on L. & E.
04/13/21	From committee chair, with author's amendments: Amend, and re-refer to Com. on L. & E. Read second time and amended.

Summary:

AB 7, as amended, Rodriguez. Emergency ambulance employees: ~~subsidized~~ *multithreat body protective gear.*

AB-7

Existing law establishes a statewide system for emergency medical ~~services and establishes services, through which the Emergency Medical Services Authority, which is responsible for establishing~~ *Authority is responsible for the coordination and integration of all state activities concerning emergency medical services, including on matters of training, scope of practice, and continuing education for emergency medical technicians and other prehospital personnel.* Existing law, the California Occupational Safety and Health Act of 1973, imposes safety responsibilities on employers and employees, including requirements that every employer furnish and use safety devices and safeguards, and adopt and use practices that are reasonably adequate to render the employment and place of employment safe and healthful. Existing law makes a violation of those requirements a crime.

~~This bill would require an emergency ambulance provider to establish a voluntary personal protective equipment (PPE) program that allows for the purchase of subsidized multithreat body protective gear that is bullet, strike, slash, and stab resistant by an emergency ambulance employee pursuant to an employer-funded stipend, and authorize an employee to voluntarily participate in a PPE program and to wear the PPE while on duty. The bill would require a provider to inform an employee of the opportunity to purchase subsidized multithreat body protective gear through a PPE program. By~~

This bill would, upon request by an emergency ambulance employee, require an emergency ambulance provider to provide that employee with multithreat body protective gear, defined as material or equipment that is worn by an employee and is bullet, strike, slash, and stab resistant, and, for these purposes only, to be considered as part of the above-described safety devices and safeguards. The bill would require the provider to make the protective gear

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readily available for the requesting employee to use when responding to an emergency call, and to provide training to that employee on the proper fitting and use of the protective gear, as specified. The bill would require an emergency ambulance provider to inform each emergency ambulance employee, upon initial employment and subsequently on an annual basis, of the employee's right to request multithreat body protective gear.

By creating new duties for emergency ambulance providers, a violation of which would be a crime, the bill would impose a state-mandated local program. The bill would not apply to the state or a political subdivision of the state.

The bill would require the Emergency Medical Services Authority to develop and establish standards for the protective gear provided, to develop a process of certification for the protective gear, and to develop guidelines for the above-described training, as specified.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.

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AB-29 State bodies: meetings. (2021-2022)
 (Cooper and Rubio)

Date	Action
04/21/21	In committee: Set, first hearing. Referred to APPR. suspense file.
04/12/21	From committee: Do pass and re-refer to Com. on APPR. (Ayes 22. Noes 0.) (April 8). Re-referred to Com. on APPR.

Summary:

AB 29, as introduced, Cooper. State bodies: meetings.

AB-29

Existing law, the Bagley-Keene Open Meeting Act, requires that all meetings of a state body, as defined, be open and public, and that all persons be permitted to attend any meeting of a state body, except as otherwise provided in that act. Existing law requires the state body to provide notice of its meeting, including specified information and a specific agenda of the meeting, as provided, to any person who requests that notice in writing and to make that notice available on the internet at least 10 days in advance of the meeting.

This bill would require that notice to include all writings or materials provided for the noticed meeting to a member of the state body by the staff of a state agency, board, or commission, or another member of the state body that are in connection with a matter subject to discussion or consideration at the meeting. The bill would require those writings or materials to be made available on the state body's internet website, and to any person who requests the writings or materials in writing, on the same day as the dissemination of the writings and materials to members of the state body or at least 72 hours in advance of the meeting, whichever is earlier. The bill would prohibit a state body from discussing those writings or materials, or from taking action on an item to which those writings or materials pertain, at a meeting of the state body unless the state body has complied with these provisions.

Board staff are monitoring this legislation for cost and impacts to its meeting requirements.

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AB-62 Income taxes: credits: costs to comply with COVID-19 regulations. (2021-2022)
 (Gray)

Date	Action
03/22/21	In committee: Hearing postponed by committee.

Summary:

AB 62, as introduced, Gray. Income taxes: credits: costs to comply with COVID-19 regulations.

AB-62

The Personal Income Tax Law and the Corporation Tax Law allow various credits against the taxes imposed by those laws. Existing law requires any bill authorizing a new tax credit to contain, among other things, specific goals, purposes, and objectives that the tax credit will achieve, detailed performance indicators, and data collection requirements.

This bill would allow a credit against those taxes for each taxable year beginning on or after January 1, 2021, to a qualified taxpayer, as defined, in an amount equal to the total amount paid or incurred during the taxable year by the qualified taxpayer to comply with the regulations adopted by the Occupational Safety and Health Standards Board on November 19, 2020, relating to COVID-19 prevention and approved by the Office of Administrative Law. The bill also would state the intent of the Legislature to comply with the additional information requirement for any bill authorizing a new income tax credit.

This bill would take effect immediately as a tax levy.

Board staff are monitoring this legislation for any potential impacts to its COVID-19 Emergency Temporary Standards.

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AB-73 Employment safety: agricultural workers: wildfire smoke. (2021-2022)
 (Rivas, Garcia, Gonzalez, and Kalra)

Date	Action
04/28/21	In committee: Set, first hearing. Referred to APPR. suspense file.
04/13/21	Re-referred to Com. on APPR.
04/12/21	Read second time and amended.
04/08/21	From committee: Amend, and do pass as amended and re-refer to Com. on APPR. (Ayes 7. Noes 0.) (April 8).
03/30/21	Re-referred to Com. on L. & E.

Summary:

AB 73, as introduced, Robert Rivas. Employment safety: agricultural workers: wildfire smoke.

AB-73

Existing law establishes the Division of Occupational Safety and Health within the Department of Industrial Relations and requires the division to, among other things, monitor, analyze, and propose health and safety standards for workers. Existing law authorizes the division to adopt regulations to implement health and safety standards. Under existing law, certain violations of a standard, order, or special order pursuant to these provisions are crimes.

Existing regulations require, under certain circumstances, an employer to provide respirators to employees for voluntary use when the air quality index for small particulate matter exceeds certain thresholds, and to encourage employees to use the respirators.

This bill would, among other things, require the division to designate a wildfire smoke strike team within each regional office for purposes of enforcing regulations regarding air quality safety for agricultural workers, as defined. The bill would require the department, by January 1, 2023, in coordination with other state agencies to establish a stockpile of N95 filtering facepiece respirators, as defined, of sufficient size to adequately equip all agricultural workers during wildfire smoke emergencies. The bill would require the department division to establish guidelines for procurement, management, and distribution of the N95 respirators.

The bill would require agricultural employers to furnish regional offices of the division with employee totals, by month, to ensure that adequate amounts of N95 respirators are stockpiled. The bill would grant these agricultural employers access to the regional

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	<p>stockpiles during wildfire smoke emergencies, unless the agricultural employer failed to register their employee totals.</p> <p>The bill would require the division, by January 1, 2023, to develop and distribute related training and information, and would require employers to periodically conduct the training. The bill would, in addition, commencing January 1, 2023, require refresher training during wildfire smoke emergencies and prior to distribution of the respirators.</p> <p>Because a violation of certain safety and health standards or orders constitute a crime, this bill would impose a state-mandated local program.</p> <p>The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.</p> <p>This bill would provide that no reimbursement is required by this act for a specified reason.</p> <p>Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.</p>
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AB-257	AB 257 Food facilities and employment. (2021-2022) (Gonzalez)	
	Date	Action
	03/25/21	From committee chair, with author's amendments: Amend, and re-refer to Com. on L. & E. Read second time and amended.
	03/25/21	Referred to Coms. on L. & E. and JUD.
	<p><u>Summary:</u></p> <p>AB 257, as amended, Lorena Gonzalez. Fast food industry working standards. Food facilities and employment.</p> <p>Existing law prescribes various protections for employees and generally charges the Labor Commissioner with the enforcement of labor laws. Existing law establishes the powers and responsibilities of the Division of Occupational Safety and Health and the Division of Labor Standards and Enforcement, which are within the Department of Industrial Relations.</p> <p>Existing law creates the California Retail Food Code, which establishes uniform health and sanitation standards for, and provides for regulation by the State Department of Public</p>	

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Health of, retail food facilities, as defined, and requires local health agencies to enforce these provisions.

This bill would enact the Fast Food Accountability and Standards Recovery Act or FAST Recovery Act. The bill would establish the Fast Food Sector Council (council), to be composed of 11 members to be appointed by the Governor, the Speaker of the Assembly, and the Senate Rules Committee, and would prescribe its powers. The purpose of the council would be to establish industry-wide minimum standards on wages, working hours, and other working conditions related to the health, safety, and welfare of, and supplying the necessary cost of proper living to, fast food restaurant workers, as well as effecting interagency coordination and prompt agency responses in this regard. The bill would define the characteristics of a fast food restaurant, including that the establishment be part of a set of fast food restaurants consisting of 30 or more establishments nationally that share a common brand, or that are characterized by standardized options for decor, marketing, packaging, products, and services.

This bill would require the council to promulgate minimum fast food restaurant employment standards, including standards on wages, working conditions, and training, and to issue, amend, and repeal any other rules and regulations, as necessary to carry out its duties. Under the bill, if a conflict exists between council's standards, rules, or regulations and those issued by another state agency, the standards, rules, or regulations issued by the council would apply to fast food restaurant workers and fast food restaurant franchisees and franchisors, and the conflicting rules or regulations of the other state agency would not have force or effect with respect to these parties. The bill would except from this application proposed standards within the jurisdiction of the Occupational Safety and Health Standards Board and would prescribe an alternate process in this regard.

This bill would require the council to conduct a full review of the adequacy of minimum fast food restaurant health, safety, and employment standards at least once every 3 years, and would empower the council to issue subpoenas for this purpose. The bill would require the council, following that review, to issue, amend, or repeal, or make recommendations to issue, amend, or repeal, any fast food employment, health or safety standard as appropriate. The bill would require the council to hold hearings every 6 months that would be open to the public, as specified, and would authorize the council to coordinate with and authorize local agencies to hold such meetings. The bill would authorize a county, and a city with a population greater than 200,000, to establish a Local Fast Food Sector Council, and would prescribe its powers and requirements for its composition. The bill would authorize a Local Fast Food Sector Council to provide recommendations to the council and would prescribe requirements for the state council in connections with these recommendations.

This bill would require standards for minimum wages, maximum hours of work, and other working conditions fixed by the council to be the minimum standards for fast food restaurant employees and would require that they be enforced by the Division of Labor Standards Enforcement. The bill would require the Labor Commissioner and the commissioner's deputies to take assignments of violations of standards issued by the

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council upon the filing of a claim in writing by an employee or an employee's authorized representative.

In addition to the above, FAST Recovery Act would require that fast food restaurant franchisor be responsible for ensuring that its franchisee comply with a variety of employment, worker, and public health and safety laws and orders, including those related to unfair business practices, ~~general liability~~, employment discrimination, the California Retail Food Code, a range of labor regulations, emergency orders, and standards issued by the council. The bill would require that a fast food restaurant franchisor be jointly and severally liable for violations of its franchisee, as specified, and would provide that specified laws may be enforced against a fast food restaurant franchisor to the same extent that they may be enforced against a franchisee. Among other things, the bill would authorize a fast food restaurant franchisee to file an action against its franchisor for monetary or injunctive relief in connection with the terms of a franchise and the franchisee's compliance with specified laws and orders. The bill would create presumptions in this regard and would provide for joint and several liability of the franchisor if the terms of a franchise are found to be a substantial factor in causing the franchisee to be liable. The bill would prohibit a fast food restaurant ~~franchisee or fast food restaurant franchisor operator~~ from discharging or in any manner discriminating or retaliating against any fast food restaurant employee for specified reasons and would create a cause of action and right to reinstatement for employees in this ~~connection~~. *connection, as well as a presumption of unlawful discrimination and retaliation in certain circumstances.*

Existing law requires a local health officer or a local enforcement agency to notify the person in charge of the food facility, investigate conditions, and take appropriate action when a local health officer is notified of an illness that can be transmitted by food or an employee in a food facility. Existing law requires the owner or the food safety certified employee to require food employees to report to the person in charge if a food employee is diagnosed with an illness. Existing law specifies that illness, for purposes of those requirements, includes salmonella typhi and norovirus, among others. A person who violates any provision of the California Retail Food Code is guilty of a misdemeanor.

This bill would additionally include COVID-19 as an illness for purposes of the above-described requirements. By increasing the duties of local officials and expanding the definition of an existing crime, this bill would impose a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Board staff are monitoring this legislation for potential jurisdictional overlap with OSHSB, and to determine if regulatory action by the Board is called for.

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AB-420	AB-420 Public health: amusement parks and COVID-19. (2021-2022) (Quirk-Silva and Valladares)	
	Date	Action
	03/01/21	Re-referred to Com. on A.,E.,S.,T., & I.M..
	02/25/21	From committee chair, with author's amendments: Amend, and re-refer to Com. on A.,E.,S.,T., & I.M. Read second time and amended.
	02/25/21	Referred to Coms. on A.,E.,S.,T., & I.M. and L. & E.
	02/05/21	From printer. May be heard in committee March 7.
	02/04/21	Read first time. To print.
	<u>Summary:</u>	
	AB 420, as introduced, Quirk-Silva. Public health: amusement parks and COVID-19.	
	Existing law, the California Emergency Services Act, authorizes the Governor to declare a state of emergency during conditions of disaster or extreme peril to persons or property, including epidemics. Pursuant to this authority, on March 4, 2020, the Governor declared a state of emergency relating to the novel coronavirus 2019 (COVID-19) pandemic. On August 28, 2020, the executive branch implemented a 4-tier "Blueprint for a Safer Economy," which identifies a county's COVID-19 risk level for business operations on a scale from widespread risk to minimal risk. On October 20, 2020, the State Department of Public Health and the Division of Occupational Safety and Health issued a guidance document, "COVID-19 INDUSTRY GUIDANCE: Amusement Parks and Theme Parks," which authorizes a small amusement park to operate at limited capacity when its county is in the moderate tier, and authorizes any other amusement park to operate at 25% capacity when its county is in the minimal tier.	
	This bill would express the intent of the Legislature that the executive branch adjust the "COVID-19 INDUSTRY GUIDANCE: Amusement Parks and Theme Parks" document and place all amusement parks, regardless of size, within the moderate risk tier, rather than the minimal risk tier. If the executive branch takes those actions, the bill would require the Department of Industrial Relations to administer a competitive grant for amusement parks to be used by amusement parks to purchase personal protective equipment for their employees. The bill would appropriate \$500,000 from the General Fund for the grant program. The bill would also make related findings and declarations.	

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	Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.
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	<p>AB-473 California Public Records Act.(2021-2022) (Chau)</p> <table border="1" style="width: 100%;"> <thead> <tr> <th style="width: 30%;">Date</th> <th>Action</th> </tr> </thead> <tbody> <tr> <td>04/21/21</td> <td>In committee: Set, first hearing. Referred to APPR. suspense file.</td> </tr> <tr> <td>04/05/21</td> <td>Re-referred to Com. on APPR. pursuant to Assembly Rule 97.</td> </tr> </tbody> </table> <p>AB-473 <u>Summary:</u> AB 473, as introduced, Chau. California Public Records Act. The California Public Records Act requires state and local agencies to make their records available for public inspection, unless an exemption from disclosure applies. This bill would recodify and reorganize the provisions of the act. The bill would include provisions to govern the effect of recodification and state that the bill is intended to be entirely nonsubstantive in effect. The bill would contain related legislative findings and declarations. The bill would become operative on January 1, 2023. Board staff are monitoring this legislation.</p>	Date	Action	04/21/21	In committee: Set, first hearing. Referred to APPR. suspense file.	04/05/21	Re-referred to Com. on APPR. pursuant to Assembly Rule 97.
Date	Action						
04/21/21	In committee: Set, first hearing. Referred to APPR. suspense file.						
04/05/21	Re-referred to Com. on APPR. pursuant to Assembly Rule 97.						

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AB-474	AB-474 California Public Records Act: conforming revisions. (2021-2022) (Chau)	
	Date	Action
	04/21/21	In committee: Set, first hearing. Referred to APPR. suspense file.
	04/05/21	Re-referred to Com. on APPR. pursuant to Assembly Rule 97.
	<p><u>Summary:</u></p> <p>AB 474, as introduced, Chau. California Public Records Act: conforming revisions.</p> <p>The California Public Records Act requires state and local agencies to make their records available for public inspection, unless an exemption from disclosure applies.</p> <p>This bill would enact various conforming and technical changes related to another bill that recodifies and reorganizes the California Public Records Act. The bill would only become operative if the related bill recodifying the act is enacted and becomes operative on January 1, 2023. The bill would also specify that any other bill enacted by the Legislature during the 2021 calendar year that takes effect on or before January 1, 2022, and that affects a provision of this bill shall prevail over this act, except as specified.</p> <p>Board staff are monitoring this legislation.</p>	

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AB-701 Warehouse distribution centers. (2021-2022)
(Gonzalez)

Date	Action
04/26/21	From committee: Do pass and re-refer to Com. on APPR. (Ayes 5. Noes 2.) (April 22). Re-referred to Com. on APPR.
04/13/21	Re-referred to Com. on L. & E.
04/12/21	From committee chair, with author's amendments: Amend, and re-refer to Com. on L. & E. Read second time and amended.

Summary:

AB 701, as amended, Lorena Gonzalez. Warehouse distribution centers.

(1) Existing law relating to employment regulation and supervision imposes special provisions on certain occupations and industries. Existing law charges the Labor Commissioner and the Division of Labor Standards Enforcement with the enforcement of labor laws.

AB-701

~~This bill~~ *bill, among other things, would require specified employers to provide to each employee, defined as a nonexempt employee who works at a warehouse distribution center, a written description of each quota to which the employee is subject, including the quantified number of tasks to be performed, or materials to be produced or handled, within the defined time period, and any potential adverse employment action that could result from failure to meet the quota. The bill would require, if the quota or the adverse consequences for failure to meet the quota have changed, the employer to provide the employee with a revised written description. The bill would prohibit an employer from taking adverse action against an employee for failure to meet a quota that has not been disclosed or for failure to meet a quota that does not allow a worker to comply with health and safety laws. The bill would require that any action taken by an employee to comply with health and safety laws or division standards be considered time on task and productive time for the purposes of any quotas or monitoring system.*

This bill would give a current and former employee, or their representative, the right to inspect or receive a copy of the most recent 3 months of that employee's personal work speed data, as provided. The bill would require an employer, at the time of hiring, to provide each employee with written notice of the employee's right to comply with health and safety laws without retaliation, the requirement that actions taken by an employee to comply with health and safety laws be considered productive work time, and the employee's right to file a complaint with the commissioner or the Division of Occupational Safety and Health. The bill would also authorize a current or former employee to bring an action for injunctive relief to

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obtain compliance with these requirements and to recover costs and reasonable attorney's fees.

(2) Under existing law, the California Occupational Safety and Health Act of 1973, the Division of Occupational Safety and Health investigates complaints that a workplace is not safe and may issue orders necessary to ensure employee safety. Under existing law, certain violations of that act or a standard, order, or special order authorized by the act are a crime.

This bill would require the ~~division~~ *division, by January 1, 2023*, to propose to the Occupational Safety and Health Standards Board for the board's review and adoption a standard that minimizes the risk of ~~illness and injury~~ *musculoskeletal injuries and disorders* among employees working in warehouse distribution ~~centers that employ production quotas, as provided.~~ *centers, as provided.* Because this bill would expand the definition of an existing crime, it would impose a state-mandated local program. *The bill would also require the division, when an employee files a complaint, to provide the employee with a written notice containing specified information regarding their rights.*

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.

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AB 783 Surface mines: safety regulation. (2021-2022)

(Gray)

Date	Action
03/15/21	Re-referred to Com. on L. & E.
03/11/21	From committee chair, with author's amendments: Amend, and re-refer to Com. on L. & E. Read second time and amended.
03/11/21	Referred to Com. on L. & E.

Summary:

AB 783, as introduced, Gray. Surface mines: safety regulation.

Existing law, enforced by the Division of Occupational Safety and Health, defines and regulates mines and tunnels and distinguishes between above ground, or surface mines, and underground mines. Existing law requires that sufficient manpower be maintained to provide for 4 annual inspections of underground mines, one inspection of surface mines or quarries annually, and 6 inspections of tunnels under construction annually.

This bill would authorize a surface mine that has been accepted into, and is currently in compliance with, the Voluntary Protection Program of the Division of Occupational Safety and Health to be excepted from the annual inspection requirement described above. The bill would prohibit the division from issuing a citation or notice to a surface mine employer more than 6 months after the occurrence of a violation. For inspections at a surface mine, the bill would require the division to provide the employer a specified notice of hazard within 72 hours after the inspection for observable conditions that may cause an injury if not addressed with reasonable promptness. The bill would prohibit the absence of identification of particular conditions in a notice, or the failure of the division to note particular conditions in a notice, from being grounds to dismiss or prevent applicable enforcement or corrective action.

Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.

AB-783

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AB-885 Bagley-Keene Open Meeting Act: teleconferencing.(2021-2022)
 (Quirk)

Date	Action
03/25/21	Re-referred to Com. on G.O.
03/24/21	From committee chair, with author's amendments: Amend, and re-refer to Com. on G.O. Read second time and amended.
02/25/21	Referred to Com. on G.O.
02/18/21	From printer. May be heard in committee March 20.
02/17/21	Read first time. To print.

Summary:

AB 885, as amended, Quirk. Bagley-Keene Open Meeting Act: teleconferencing.

AB-885

The Bagley-Keene Open Meeting Act (Bagley-Keene Act), requires, with specified exceptions, that all meetings of a state body, as defined, be open and public, and all persons be permitted to attend any meeting of a state body, except as provided. The Bagley-Keene Act, among other things, requires a state body that elects to conduct a meeting or proceeding by teleconference to make the portion of the meeting that is required to be open to the public audible to the public at the location specified in the notice of the meeting. The Bagley-Keene Act requires a state body that elects to conduct a meeting or proceeding by teleconference to post agendas at all teleconference locations, identify each teleconference location in the notice and agenda of the meeting or proceeding, and requires each teleconference location to be accessible to the public. That law authorizes any meeting of a state body that is an advisory board, advisory commission, advisory committee, advisory subcommittee, or similar multimember advisory body to hold an open meeting by teleconference if the meeting complies with the requirements of the act, except as provided. Existing law requires that when a member of a multimember state advisory body participates remotely the body provide a means by which the public may remotely hear audio of the meeting or remotely observe the meeting. Existing law requires a multimember state advisory body to end or adjourn a meeting if it discovers that a required means of remote access has failed during the meeting, and, if the meeting is to adjourn and reconvene on the same day, that law requires the body to communicate, among other things, how a member of the public may hear audio of the meeting or observe the meeting.

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This bill would require a state body that elects to conduct a meeting or proceeding by teleconference to make the portion that is required to be open to the public both audibly and visually observable. The bill would require a state body that elects to conduct a meeting or proceeding by teleconference to post an agenda at the designated primary physical meeting location in the notice of the meeting where members of the public may physically attend the meeting and participate. The bill would extend the above requirements of meetings of multimember advisory bodies that are held by teleconference to meetings of all multimember state bodies. The bill would require a multimember state body to provide a means by which the public may both audibly and visually remotely observe a meeting if a member of that body participates remotely. The bill would further require any body that is to adjourn and reconvene a meeting on the same day to communicate how a member of the public may both audibly and visually observe the meeting. The bill would also make nonsubstantive changes to those provisions.

Existing constitutional provisions require that a statute that limits the right of access to the meetings of public bodies or the writings of public officials and agencies be adopted with findings demonstrating the interest protected by the limitation and the need for protecting that interest.

This bill would make legislative findings to that effect.

Board staff are monitoring this legislation for cost and impacts to its meeting requirements.

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AB-893 Emergency regulations: Division of Occupational Safety and Health: State Department of Public Health. (2021-2022)

(Davies)

Date	Action
02/25/21	Referred to Com. on A. & A.R.
02/18/21	From printer. May be heard in committee March 20.
02/17/21	Read first time. To print

Summary:

AB 893, as introduced, Davies. Emergency regulations: Division of Occupational Safety and Health: State Department of Public Health.

AB-893

Existing law establishes the Occupational Safety and Health Standards Board within the Department of Industrial Relations to adopt occupational health and safety standards to protect the welfare of employees. The Division of Occupational Safety and Health enforces occupational safety and health standards and orders.

Existing law establishes the State Department of Public Health, within the California Health and Human Services Agency, and vests the department with certain duties, powers, functions, jurisdiction, and responsibilities over specified public health programs.

Existing law, the Administrative Procedure Act, governs, among other things, the procedures for the adoption, amendment, or repeal of regulations, including emergency regulations, by state agencies and for the review of those regulatory actions by the Office of Administrative Law.

This bill would require the Division of Occupational Safety and Health or the State Department of Public Health, within 14 calendar days of the release of a federal recommendation that conflicts with an emergency regulation related to COVID-19 issued by the division or the department, to review the conflicting emergency regulation and make a determination to either amend the regulation or submit a report to the Legislature on the decision not to amend the regulation, as specified. The bill would require the division or department, before determining whether to amend the emergency regulation, to provide public notice and an opportunity for public comment. The bill would repeal these provisions

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90 days after the termination of the state of emergency related to the COVID-19 pandemic declared by the Governor.

This bill would declare that it is to take effect immediately as an urgency statute.

Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.

AB-1175 Division of Occupational Safety and Health: inspections and investigations: advance notice. (2021-2022)

(Aguiar-Curry)

Date	Action
05/05/21	In committee: Set, first hearing. Referred to APPR. suspense file.
04/26/21	From committee: Do pass and re-refer to Com. on APPR. (Ayes 7. Noes 0.) (April 22). Re-referred to Com. on APPR.

AB-1175 Summary:

AB 1175, as amended, Aguiar-Curry. ~~Employees: regulation and supervision. Division of Occupational Safety and Health: inspections and investigations: advance notice.~~

Existing law, the California Occupational Safety and Health Act of 1973, vests the Division of Occupational Safety and Health within the Department of Industrial Relations with the power, jurisdiction, and supervision over every employment and place of employment, which is necessary adequately to enforce and administer all laws and lawful standards and orders, or special orders requiring such employment and place of employment to be safe, and requiring the protection of the life, safety, and health of every employee in such employment or place of employment, including to inspect and investigate employments and places of employment, as prescribed. The Occupational Safety and Health Administration (OSHA), except as provided, prohibits a person or employer from being given advance warning of an inspection or investigation by any authorized representative of the division. OSHA authorizes the Chief of the Division of Occupational Safety and Health or an authorized representative to permit advance notice of an inspection or investigation as

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prescribed by the Director of Industrial Relations. OSHA prohibits the authorization of advance notice when the investigation or inspection is to be made as a result of an employee complaint, unless there is imminent danger to the health or safety of an employee or employees. OSHA makes it a crime, punishable as prescribed, for any person to give unauthorized advance notice of any inspection to be conducted.

This bill would revise those advance warning provisions to prohibit any representative of the division from giving advance notice of an inspection or investigation to an employer or other person unless authorized under OSHA. The bill would authorize the chief or their authorized representatives to permit advance notice of an inspection or investigation when advance notice is necessary to ensure availability of essential personnel or access to the site, equipment, or process, as prescribed by the director. The bill would delete the prohibition on the authorization of advance notice when the investigation or inspection is to be made as a result of an employee complaint. The bill would expand the crime to apply to unauthorized advance notice of an investigation to be conducted, thereby imposing a state-mandated local program.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

Board staff are monitoring this legislation.

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AB-1291 State bodies: open meetings. (2021-2022)
(Frazier)

Date	Action
05/03/21	In Senate. Read first time. To Com. on RLS. for assignment.
04/29/21	Read third time. Passed. Ordered to the Senate.
04/22/21	Read second time. Ordered to Consent Calendar.
04/21/21	From committee: Do pass. To Consent Calendar. (Ayes 14. Noes 0.) (April 21).
04/12/21	From committee: Do pass and re-refer to Com. on APPR. with recommendation: To Consent Calendar. (Ayes 22. Noes 0.) (April 8). Re-referred to Com. on APPR.

AB-1291 Summary:

AB 1291, as introduced, Frazier. State bodies: open meetings.

The Bagley-Keene Open Meeting Act requires that meetings of a state body be open and public and that all persons be permitted to attend, with certain exceptions. Existing law provides that, subject to certain exceptions and reasonable regulations, the state body shall provide members of the public an opportunity to directly address the state body on agenda items. Existing law authorizes the state body to limit the amount of time allotted for each member of the public to speak, but specifies that members of the public who use translators shall be given twice that allotted amount of time.

This bill would also require a state body, when it limits time for public comment, to provide at least twice the allotted time to a member of the public who utilizes translating technology to address the state body. The bill would additionally make technical, nonsubstantive changes.

Board staff are monitoring this legislation for cost and impacts to its meeting requirements.

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SB-321 Employment safety standards: household domestic services. (2021-2022)
(Durazo)

Date	Action
05/04/21	May 3 hearing: Placed on APPR suspense file.
04/21/21	Set for hearing May 3.
04/15/21	Read second time and amended. Re-referred to Com. on APPR.
04/14/21	From committee: Do pass as amended and re-refer to Com. on APPR. (Ayes 8. Noes 2.) (April 13).
03/25/21	Set for hearing April 13.
03/23/21	From committee: Do pass and re-refer to Com. on JUD. (Ayes 4. Noes 1.) (March 22). Re-referred to Com. on JUD.

Summary:

SB-321

SB 321, as amended, Durazo. Employment safety standards: household domestic services.

Existing law, the California Occupational Safety and Health Act of 1973, requires employers to comply with certain standards ensuring healthy and safe working conditions, as specified. Existing law charges the Division of Occupational Safety and Health within the Department of Industrial Relations with enforcement of the act, subject to oversight by the Chief of the Division of Occupational Safety *and Health* (chief). Existing law makes a violation of the act a crime.

Existing law defines “employment,” for purposes of the act, to include the carrying on of any trade, enterprise, project, industry, business, occupation, or work, including all excavation, demolition, and construction work, or any process or operation in any way related thereto, in which any person is engaged or permitted to work for hire, except household domestic service.

This bill would delete the above-described exception for household domestic service, thereby making it subject to the act. The bill would provide, however, that “employment” does not include household domestic service that is publicly funded, as specified, unless it is subject to certain regulatory ~~provisions~~. *provisions, nor would “employment” include family daycare homes, as specified.* The bill would make coverage for household domestic service operative on January 1, 2023, as specified. By expanding the scope of a crime, the bill would impose a state-mandated local program.

The bill would require the chief or a representative of the chief to convene an advisory committee and, within 6 months of convening, in consultation with the Commission on

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Health and Safety and Workers' Compensation, make findings and recommendations to the Occupational Safety and Health Standards Board for industry-specific regulations related to household domestic service. The bill would require the board to adopt industry-specific regulations pursuant to these provisions within a reasonable time and no later than January 1, 2023.

Existing law authorizes the chief and all qualified and authorized division inspectors and investigators to have free access to any place of employment to make an investigation or inspection during regular working hours, and at other reasonable times when necessary, for the protection of safety and health.

This bill would require the chief or their representative, when the workplace is a residential dwelling, to initiate telephone contact with the employer in response to an alleged violation received from a domestic service employee within a specified timeframe. The bill would require the chief or their representative to provide specified notice to the employer about the alleged violation and to investigate the violation in accordance with certain procedures. The bill would require the employer to provide specified information to the division regarding mitigation efforts to correct the violation and to provide copies of all correspondence received from the division to the domestic service employee or to post the correspondence, as specified. The bill would authorize the chief or their authorized representative, for complaints alleging serious illness or injury or death in household domestic service, to enter the premises with permission or with an inspection warrant without first initiating telephone contact, as specified. The bill would require investigations of complaints in household domestic service employment to be conducted in a manner that avoids any unwarranted invasion of personal privacy and to not contain any personal, financial, or medical information of residents residing in the residential dwelling that is not pertinent to the investigation of the complaint.

Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.

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SB-410	SB-410 Occupational safety and health: regulations. (2021-2022) (Leyva)	
	Date	Action
	05/05/21	Read second time. Ordered to third reading.
	05/04/21	From committee: Be ordered to second reading pursuant to Senate Rule 28.8.
	04/21/21	Set for hearing May 3.
	04/20/21	From committee: Do pass and re-refer to Com. on APPR. (Ayes 4. Noes 1.) (April 19). Re-referred to Com. on APPR.
	04/06/21	Set for hearing April 19.
<u>Summary:</u>		
SB 410, as amended, Leyva. Occupational safety and health: regulations.		
Existing law establishes the Occupational Safety and Health Standards Board within the Department of Industrial Relations. Existing law authorizes the standards board to adopt, amend, or repeal occupational safety and health standards and orders, as defined, and requires the adoption of standards at least as effective as the federal standards for all issues for which federal standards have been promulgated under provisions of the federal Occupational Safety and Health Act of 1970. Existing law generally requires the adoption, amendment, or repeal of standards and orders by the standards board to comply with the rulemaking provisions of the Administrative Procedure Act (APA), but exempts from provisions of the APA relating to public participation and review of proposed regulations a standard or amendment to any standard adopted by the standards board that is substantially the same as a federal standard, including existing APA requirements, for a proposed nonmajor regulation, to prepare a prescribed economic impact assessment and, for a proposed major regulation, to prepare a standardized regulatory impact analysis in a manner prescribed by the Department of Finance.		
This bill would exempt any occupational safety and health standard and order from the standardized regulatory impact analysis requirement.		
Board staff are monitoring this legislation to determine if regulatory action by the Board is called for.		

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Business Meeting Executive Officer's Report