

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

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

Subchapter 4. Construction Safety Orders  
Article 15. Cranes and Derricks in Construction

Amend Section 1618.1 as follows:

§1618.1. Operator ~~training, certification and evaluation.~~ ~~Qualification and Certification.~~

(a) ~~General requirements for operators.~~ ~~Qualifications and Certification.~~ 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 CSO Article 15, or the person is operating the equipment during a training period as an operator-in-training in accordance with subsection (b) (d) of this section., ~~or the operator is qualified or certified to operate the equipment in accordance with the following:~~

- (1) When a non-military government entity issues operator licenses for equipment covered under this Article, and that government licensing program meets the requirements of subsections ~~(e)(2), (e)(2) and (b)(1)(C) and (D)~~ of this section, the equipment operator shall be licensed by that government entity for operation of equipment within that entity's jurisdiction.
- (2) Where subsection (a)(1) of this section is not applicable, the certification ~~or qualification~~ shall comply with subsection ~~(d) (b)~~ of this section.
- (3) Whenever operator ~~qualification or certification or licensure~~ is required under this section, the employer shall provide the ~~qualification or certification or licensure~~ at no cost to employees. ~~operators who are employed by the employer on July 7, 2011.~~

~~(b) Option (1): Certification by an accredited crane operator certifying entity.~~

~~(1) 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:~~

~~(A) Pass a physical examination conducted by a physician 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.~~

~~(B) 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 recognized laboratory service;~~

~~(C) Pass a written examination developed, validated, and administered in accordance with 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, include the following:~~

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1. Operational characteristics and controls, including characteristic and performance questions appropriate to the crane type for which qualification is sought;
  2. Emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;
  3. 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;
  4. 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.
  5. Procedures for preventing and responding to power line contact.
  6. Technical knowledge applicable to:
    - (i) The suitability of the supporting ground and surface to handle expected loads.
    - (ii) Site hazards.
    - (iii) Site access.
- (D) Pass a "hands-on" examination to demonstrate proficiency in operating the specific type of crane, which at a minimum shall include the following:
1. Ability to recognize, from visual and auditory observation, the items listed in Section 1613.4 (shift inspection).
  2. Operational and maneuvering skills.
  3. Application of load chart information.
  4. Application of safe shut-down and securing procedures.
- (2) Certification. Certificates shall be valid for a maximum of five (5) years. An Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in subsection (b)(1)(A) (b)(1)(D) of this section.
- (A) An operator will be deemed qualified to operate a particular piece of equipment if the operator is certified under subsection (b) of this section for that type and capacity of equipment or for higher capacity equipment of that type. If no accredited testing agency offers certification examinations for a particular type and/or capacity of equipment, an operator will be deemed qualified to operate that equipment if the operator has been certified for the type/capacity that is most similar to that equipment and for which a certification examination is available. The operator's certificate shall state the type/capacity of equipment for which the operator is certified.
- (B) A certification issued under this option (Option 1) is portable and meets the requirements of subsection (a)(2).
- (3) Accredited Certifying Entity. A certifying entity is any organization whose certification program is accredited by either the National Commission for Certifying Agencies (NCCA), or the American National Standards Institute (ANSI). ANSI accreditation shall be in accordance with the requirements of the ANSI, International Organization for Standardization (ISO);

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International Electrotechnical Commission (IEC) 17024:2003(E), Conformity Assessment-General Requirements for Bodies Operating Certification of Persons, which is hereby incorporated by reference.

(A) The accredited certifying entity shall have its accreditation reviewed by the nationally recognized accrediting agency at least every three years.

~~(4) 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 (b)(1). 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 1618.1(b)(1)(A) (b)(1)(C) of this section shall not be required to take the "hands-on" examination specified in subsection (b)(1)(D) to re-certify.~~

~~(5) 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.~~

(b) Operator training. The employer shall provide each operator-in-training with sufficient training, through a combination of formal and practical training, 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 employer.

(1) The employer shall provide instruction on the knowledge and skills listed in subsection (g) of this section to the operator-in-training.

(2) The operator-in-training shall be continuously monitored on site by a trainer while operating equipment.

(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) of this section:

(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 1612.1(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.

(B) If the equipment is used to hoist personnel.

(C) In multiple-equipment lifts.

(D) If the equipment is used over a shaft, cofferdam, or in a tank farm.

(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.

(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 this Article.

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(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:

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.

2. The operator's trainer shall be an employee or agent of the operator-in-training's employer.

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.

(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.

(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.

~~(c) Option (2): Licensing by a government entity.~~

~~(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 subsection (c)(2) of this section are met.~~

~~(2) Licensing criteria:~~

~~(A) The requirements for obtaining the license include passing a physical examination and a substance abuse test as prescribed in subsections (b)(1)(A) and (B), and an assessment, by written and practical tests, of the operator applicant regarding, at a minimum, the knowledge and skills listed in subsections (b)(1)(C) and (D) of this section.~~

~~(B) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel.~~

~~(C) The government authority that oversees the licensing department/office, has determined that the requirements in subsections (c)(2)(A) and (B) of this section have been met.~~

~~(D) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the requirements in subsection (c)(2)(A).~~

~~(3) A license issued by a government accredited crane operator testing organization that meets the requirements of this option:~~

~~(A) Meets the operator qualification requirements of this section for operation of equipment only within the jurisdiction of the government entity.~~

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~~(B) Is valid for the period of time stipulated by the licensing department/office, but no longer than 5 years.~~

(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 of this section as follows.

~~(d) Pre-qualification/certification training period. An employee who is not qualified or certified under this section is permitted to operate equipment only as an operator in training and only where the requirements of this subsection are met.~~

~~(1) The employer shall provide each operator in training with sufficient training prior to operating the equipment to enable the operator in training to operate the equipment safely under limitations established by this section (including continuous monitoring) and any additional limitations established by the employer.~~

~~(2) The tasks performed by the operator in training while operating the equipment shall be within the operator in training's ability.~~

~~(3) Trainees may be authorized to operate equipment 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.~~

~~(A) The operator's trainer shall be an employee or agent of the operator in training's employer.~~

~~(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.~~

~~(C) The operator in training shall not operate the equipment in any of the following circumstances unless the exception stated in subsection (d)(3)(C)5 of this section is applicable:~~

~~1. 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 1612.1(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.~~

~~2. If the equipment is used to hoist personnel.~~

~~3. In multiple equipment lifts.~~

~~4. If the equipment is used over a shaft, cofferdam, or in a tank farm.~~

~~5. 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.~~

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(d) Option (1): Certification by an accredited crane operator certifying entity.

(1) Certification. Certificates shall be valid for a maximum of five (5) years. An Accredited Certifying Entity shall issue the certificate of competency to operators who successfully demonstrate the qualifications set forth in subsection (g) of this section.

(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 or for higher-capacity equipment of that type. 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 shall state the type of equipment for which the operator is certified.

(B) A certification issued under this option (Option 1) is portable and meets the requirements of subsection (a)(2) of this section.

(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.

(A) The accredited certifying entity shall have its accreditation reviewed by the nationally recognized accrediting agency at least every three (3) years.

(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) of this section. 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 (g)(1)-(g)(3) of this section shall not be required to take the "hands-on" examination specified in subsection (g)(4) of this section to re-certify.

(4) 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.

(e) Effective Dates and Phase-in.

(1) Mobile and tower crane operator qualifications and certification shall be in accordance with the provisions of General Industry Safety Orders, Section 5006.1 effective June 1, 2005, until November 10, 2018.

(2) The provisions of this section are applicable July 7, 2011, except for subsections (a)(2) and (d) which are applicable November 10, 2018.

(3) When subsection (a)(1) is not applicable, the following requirements shall apply until November 10, 2018:

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~~(A) The employer shall ensure that operators of equipment covered by this standard are competent to operate the equipment safely.~~

~~(B) Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, the employer shall train that employee prior to operating the equipment. The employer shall ensure that each operator is evaluated to confirm that he/she understands the information provided in the training.~~

(e) Option (2): Licensing by a government entity.

(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 subsection (e)(2) of this section are met.

(2) Licensing criteria.

(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) of this section, 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) of this section.

(B) The testing meets industry recognized criteria for written testing materials, practical examinations, test administration, grading, facilities/equipment and personnel.

(C) The government authority that oversees the licensing department/office, has determined that the requirements in subsections (e)(2)(A) and (B) of this section have been met.

(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) of this section.

(3) A license issued by a government accredited crane operator testing organization that meets the requirements of this option:

(A) Meets the operator qualification requirements of this section for operation of equipment only within the jurisdiction of the government entity.

(B) Is valid for the period of time stipulated by the licensing department/office, but no longer than five (5) years.

(f) Evaluation.

(1) The employer shall ensure through an evaluation that each operator is qualified by a demonstration of:

(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.

(B) The ability to perform the hoisting activities required for assigned work, including, if applicable, blind lifts, personnel hoisting, and multi-crane lifts.

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(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.

(3) The evaluation required under subsection (f)(1) of this section shall be conducted by an individual who has the knowledge, training, and experience necessary to assess equipment operators.

(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) of this section are satisfied. Once the evaluation is completed successfully, the employer may allow the operator to operate other equipment that the employer can demonstrate does not require substantially different skills, knowledge, or ability to recognize and avert risk to operate.

(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) of this section, 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.

(6) When an employer is required to provide an operator with retraining under subsection (b)(5) of this section, the employer shall re-evaluate the operator with respect to the subject of the retraining.

(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 Article. Certificates shall be issued to operators who:

(1) Pass a physical examination conducted by a physician 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.

(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 recognized laboratory service;

(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:

(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:

1. The controls and operational/performance characteristics.



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2. Emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;
  3. Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment.
  4. Procedures for preventing and responding to power line contact.
  5. Technical knowledge of the subject matter criteria listed in 29 CFR 1926, 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.
  6. Technical knowledge applicable to the suitability of the supporting ground and surface to handle expected loads, site hazards, and site access.
  7. 29 CFR 1926, Subpart CC, including applicable incorporated materials.
- (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) of this section.
- (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 1613.4 (Inspections – Each Shift).
  - (B) Operational and maneuvering skills.
  - (C) Application of load chart information.
  - (D) Application of safe shut-down and securing procedures.
- (h) Effective dates.
- (1) Apart from the evaluation and documentation requirements in subsections (a) and (f), this section is effective on April 6, 2020.
  - (2) The evaluation and documentation requirements in subsections (a) and (f) are effective on June 5, 2020.

**EXCEPTIONS TO SECTION 1618.1:**

- (1) Operator qualification or certification under this section is not required for operation of derricks (see Section 1619.2), side boom cranes (see Section 1694) or equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2000 pounds or less (see Section 1610.8). The training requirements in those other sections continue to apply [for the training requirement for operators of sideboom cranes, follow subsection 1618.4(c)].
- (2) Operator qualification or certification under this section is not required for operation of articulating/knuckle-boom cranes having a boom length of less than 25 feet or a maximum rated load capacity of less than 15,000 pounds when used to deliver material to a construction site.
- (3) Operators of electric line trucks (digger derrick trucks) as defined in Section 2700 of the Electrical Safety Orders and regulated by Section 2940.7 of the High Voltage Electrical Safety

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Orders. This exception does not include mobile truck cranes designed and built in accordance with the American Society of Mechanical Engineers (ASME) B30.5 standards.

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



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Amend Section 1618.4 as follows:

§1618.4. Training.

\*\*\*

(c) Operators.

~~(1) Operators in Training for equipment where certification or qualification is required by this Article.~~

The employer shall train each operator ~~in training~~ in accordance with subsections 1618.1(a) and (b), on the safe operation of the equipment the operator will be using. ~~in the areas addressed in Section 1618.1(b)(1)(C) and (D). The employer shall provide re-training if the operator in training does not pass a qualification or certification test.~~

~~(2) The employer shall train each operator covered under the Exceptions to Section 1618.1 on the safe operation of the equipment the operator will be using.~~

~~Transitional Period. During the four-year phase-in period for operator certification or qualification, as provided in Section 1618.1(e), employers shall train each operator who has not yet been certified or qualified in the areas addressed in Section 1618.1(b)(1)(C) and (D).~~

~~(3) Operators excepted from the requirements of Section 1618.1. The employer shall train each operator excepted under Section 1618.1(a) from the requirements of Section 1618.1 on the safe operation of the equipment the operator will be using.~~

~~(3) (4) The employer shall train each operator of the equipment covered by this subpart in the following practices:~~

(A) On friction equipment, 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 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. See Section 1616.1(g) and (j) for additional requirements.

(B) Where available, the manufacturer's emergency procedures for halting unintended equipment movement.

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