Crane Operator Certification: Impact of the California Rule

AGC SAFETY AND HEALTH COUNCIL

Riverside, California

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Overview of Presentation

• Scope of the California Rule (and differences from Federal)
• Crane Operator Certification/Qualification
  – Impact on State Regulations – California in this case
  – Impact on NCCCO Exams
• Signalperson Qualification
• Rigger Qualification
• Maintenance & Repair Employee Qualification
• Training
Cal-OSHA Differences

- CA uses “shall” rather than “must”.
- Scope – 15 vs. 17 exclusions (tree trimming and articulating crane treated differently).
- Definition of “Crane”
  - Fed defines crane in Scope Section
  - Cal uses Fed definition, expands on it, plus lists/describes 25 common types of cranes in definitions
- CA has definition of “Certifying Agency” - relates to third party inspection requirement.
- Equipment >3 tons Capacity shall be inspected by third party GISO4884.
Cal-OSHA Differences

- California has a single definition for “qualified person” which applies horizontally. For cranes, California uses certified agents, certificating agencies, and in some cases, RPE’s for tasks which the federal standards delegate to qualified persons.

- **Power Line Safety** - CA does not consider proximity alarms and insulating links to be a reliable means of preventing encroachment/electrocution and has deleted these two items.

- **Equipment Operations closer than Table A Zone** – CA prohibits this activity and has no exceptions.
Cal-OSHA Differences

- Anti Two-Blocking - CA does not permit temporary alternative measures for inoperative A2B’s (except certain Lattice applications). Exception for Lattice cranes is more limited in CA’s Regulation.

- Shift Inspections – Fed says competent person must inspect before or during shift. CA says qualified person shall inspect prior to first operation.

- Unsafe conditions shall be corrected – repairs made prior to use. Fed allows a “reassessment” during operation.

- Periodic and Annual Inspections in CA more protective-language in GISO has been moved over to construction.
Cal-OSHA Differences

• **Wire Rope** - CA requires “qualified person”; Fed says “competent person” inspect wire rope.

• **Signals** – Cal-OSHA does not permit “new signals”, except with a variance.

• **Personal Fall Arrest system** - Fed allows anchoring to hook under certain conditions. CA does not allow this practice.

• **Overhead Loads** - Fed has an exception to self-closing latches on hooks – “J” hooks are permitted when setting wooden trusses. CA does not allow this exception.
Cal-OSHA Differences

- **Operator Certification** - CA has no Option 2 Qualification by an audited employer program, or Option 3 Qualification by the U.S. Military.

- **Exceptions** – Cal-OSHA modified GISO 5006.1 Ex. 1 to provide limited federal exception for knuckle-boom cranes used to deliver material to a construction site.

- **Option 4** - An additional proposal is being made to include passing a physical examination and a substance abuse test that is not included when a non-military government entity issues operator licenses.

- **Pre-qualification Training** – Continuous monitoring - CA does not permit the operator-in-training to operate the equipment while the trainer is on break.
Cal-OSHA Differences

- **Operator Testing** - CA does not allow a testing entity to provide training as well as testing services.

- **Administering Tests** – Fed allows tests to be given verbally under certain conditions. Written tests are required in CA.

- **Training** - There is no state counterpart for 1926.1410(m). Liveline work not permitted in CA.

- **Operational Aids** - CA does not permit temporary alternatives or substitutes if operational aides are inoperative.
National Commission for the Certification of Crane Operators

- NCCCO formed January 1995
- Industry established and driven
- Independent, non-profit organization
- ANSI and NCCA Accredited Programs
- Recognized by OSHA since 1999
- 70,000 certified personnel nationwide
Available Certifications

- **Mobile Crane Operator**
  - Telescopic Boom—Fixed Cab (TSS)
  - Telescopic Boom—Swing Cab (TLL)
  - Lattice Boom Truck (LBT)
  - Lattice Boom Crawler (LBC)

- **Articulating Crane Operator**
  - Articulating Boom Crane (ABC)
  - Articulating Boom Crane w/Winch (ABW)
  - Articulating Boom Loader (ABL)

- **Tower Crane Operator**

- **Overhead Crane Operator**

- **Digger Derrick — (2012)**

- **Crane Certifier - Inspector — (year end 2011)**

- **Signalperson**

- **Rigger**
  - Level I
  - Level II
OSHA Rule Timeline

- Advanced Notice of Proposed Rulemaking: October 1992
- OSHA’s Negotiated Rulemaking Committee intent: July 2002
- First CDAC Meeting: July 2003
- Final CDAC Meeting: July 2004
- Published in Federal Register: October 2008
- Public Hearings held at DoL: March 2009
- Final Submission of Written Comments: June 2009
- Publication Date of Final Rule: August 9, 2010
- **Effective Date**: November 8, 2010
- **Effective Date**: July 7, 2011
- Phase-in Federal – November 10, 2014
- Phase-in California – July 7, 2015
California Rule based on (CDAC)

- §1610. General Requirements.
- §1610.1. Scope.
- §1610.2. Design Standards.
- §1610.3. Definitions.
- §1610.5. Ground Conditions.
- §1610.6. Equipment Modifications.
- §1610.7. Fall Protection.
- §1610.8. Equipment with a Rated Hoisting/Lifting Capacity of 2,000 Pounds or Less.
- §1610.9. Equipment over Three Tons Rated Capacity.
- §1611. Assembly/Disassembly.
  - §1611.1. Assembly/Disassembly - Selection of Manufacturer or Employer Procedures.
  - §1611.2. Assembly/Disassembly - General Requirements (Applies to All Assembly and Disassembly Operations).
  - §1611.3. Disassembly - Additional Requirements for Dismantling of Booms and Jibs (Applies to Both the Use of Manufacturer Procedures and Employer Procedures).
  - §1611.4. Assembly/Disassembly - Employer Procedures - General Requirements.
- §1611.5. Power Line Safety (Up to 350 kV) - Assembly and Disassembly.
- §1612. Power Line Safety.
  - §1612.1. Power Line Safety (Up to 350 kV) - Equipment Operations.
  - §1612.2. Power Line Safety (Over 350 kV).
  - §1612.3. Power Line Safety (All Voltages) - Equipment Operations Closer Than the Table A Zone.
  - §1612.4. Power Line Safety - While Traveling Under or Near Power Lines with No Load.
California Rule based on (CDAC)

- §1613. Inspections.
- §1613.1. Inspections - Modified Equipment.
- §1613.2. Inspections - Repaired/Adjusted Equipment.
- §1613.3. Inspections - Post-Assembly.
- §1613.4. Inspections - Each Shift.
- §1613.5. Inspections - Periodic.
- §1613.6. Inspections - Annual/Comprehensive.
- §1613.7. Inspections - Severe Service.
- §1613.8. Inspections - Equipment Not in Regular Use.
- §1613.9. Inspections - General.
- §1613.10. Inspections - Wire Rope.
- §1614. Wire Rope - Selection and Installation Criteria.
- §1615. Safety Devices.
- §1615.2. Operational Aids.
- §1616. Operations.
- §1616.1. Operation.
- §1616.2. Authority to Stop Operation.
- §1616.3. Work Area Control.
- §1616.4. Overhead Loads.
- §1616.5. Free Fall and Controlled Load Lowering.
California Rule based on (CDAC)

- §1616.6. Hoisting Personnel.
- §1616.7. Multiple-Crane/Derrick Lifts - Supplemental Requirements.
- §1617. Signals.
- §1617.2. Signals - Radio, Telephone or Other Electronic Transmission of Signals.
- §1618. Qualification and Training.
- §1618.1. Operator Qualification and Certification.
- §1618.2. Signal Person Qualifications.
- §1618.3. Qualifications of Maintenance and Repair Employees.
- §1618.4. Training.
- §1619. Supplemental Requirements.
- §1619.1. Tower Cranes.
- §1619.2. Derricks.
- §1619.3. Floating Cranes/Derricks and Land Cranes/Derricks on Barges.
- §1619.4. Overhead & Gantry Cranes.
- §1619.5. Dedicated Pile Drivers.
Scope of Rule

• Cranes and Derricks in Construction
• Definitions of “Construction”
  – OSHA Letters of Interpretation (Fed-OSHA)
    • Construction vs. Maintenance
• Operator Certification/Qualification
  – More than 2000 lbs. maximum rated lifting capacity
  – Excluded: Derricks, Sideboom cranes
• Cranes Covered
  – Cal-OSHA 1610.1: Scope
  – Various Exclusions
Exclusion Examples

- Excavators, Backhoes, Power Shovels
  - Including use with chains, slings, and other rigging
- Aerial Work Platforms
- Forklifts
  - Except when equipped with winch or hook
- Overhead Cranes
  - Permanently installed
- Digger Derricks
  - Work related to poles carrying electric and telecommunication lines (EEI Legal action)
- Articulating Cranes
  - When delivering materials to jobsites
Crane Operator Certification/Qualification Requirements

Cal-OSHA 1618.1

- **OPTION 1**: Accredited testing organization
- **OPTION 2**: Licensing by a government entity
- **NO OPTIONS** in California for “Audited Program” or Military

*Deadline to meet requirements: July 7, 2015*
Option 1

Nationally recognized accrediting agency (e.g. NCCA or ANSI)

Determines compliance with testing/test administration criteria

Accredited testing organization (e.g. NCCCO)

Develops and administers the tests (written & practical) to certify operators

Different tests for different capacity/type of equipment
Option 2

State/local government entity that oversees licensing office

Determines license office complies with testing/test administration criteria

State/local government license office

Issues Operator license
## Cal-OSHA’s Options Matrix

### 1618.1 (b)&(c)

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<th>Accredited testing organization</th>
<th>Portable</th>
<th>Valid</th>
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<th>Audited employer qualification program</th>
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<th>US Military license</th>
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<td>Set by issuing entity</td>
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<table>
<thead>
<tr>
<th>Government entity license</th>
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<tbody>
<tr>
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Certification Criteria

1618.1(b)(1)(C) & (D)

- **Knowledge**
  - Controls/performance characteristics
  - Calculate load chart capacity
  - Preventing power line contact
  - Ground support
  - Read and locate info in operating manual
  - Appendix C subjects
  - 1618.4(c)(4)

- **Skills**
  - Shift Inspection criteria
  - Operational skills
  - Application of load chart information
  - Safe shut-down and securing procedures

**OPTION 1:** Accredited testing organization

**OPTION 2:** Government entity license
Impact on NCCCO Exams

• Top-to-Bottom Review
• Written Exam Content Compliance
  – Three-phase process
    • Phase 1: Ensure Compliance of Current Items
    • Phase 2: Build New OSHA Items
    • Phase 3: Continuous Maintenance of Items
  – Content Outline
  – Reference List
Impact on NCCCO Exams

- Revised Knowledge Areas
  - Definitions and Terminology
  - Assembly/Disassembly
    - Lattice Boom Cranes and Tower Cranes
  - Power Line Safety
  - Inspections
    - Cranes and Wire Rope
  - Qualification Requirements
  - Appendix C (of Federal) – not enforceable language – not used in the CA regulation
Impact on NCCCO Exams

• Review of Policies and Procedures
  – Calculator Usage
  – Test Delivery and Administration
    • Language and Literacy
1618.1(d)

- Operator-in-Training
  - Tasks within their ability
  - Continuous direct supervision
    - Trainer performs no other tasks while supervising
    - Direct line of sight or direct communication
  - Trainer is certified/qualified operator or has passed at least the written exam
  - Trainer is employee or agent of employer
  - Specific applications are forbidden
    - Near power lines, multi-crane lifts, hoisting personnel, etc.
Crane Operator Training

- **Transitional Period – 1618.4(c)(2)**
  - During the four-year phase in, employers shall train employees who have not yet been certified/qualified.

- **Exempted Crane Operators – 1618.4(c)(3)**
  - ALL crane operators shall be trained on the safe operation on the equipment the operator will be using.

- **Specific Training – 1618.4(c)(4)**
  - On friction equipment, testing the boom hoist brake
  - Manufacturer’s emergency procedures for halting unintended equipment’s movement.
Signal Person Requirements

1617.1(a)

- All workers who will participate in signaling or flagging a crane, giving direction as to where and what will be lifted, shall be qualified.
  - Point of operation not in full view of operator
  - View of direction of travel is obstructed
  - Site-specific safety conditions
Signalperson Qualifications

1618.2(a)

• OPTION 1:
  – Third Party qualified evaluator
    • Portable
    • Documentation required
  – Certification meets this requirement

• OPTION 2:
  – Employer’s qualified evaluator
    • Non-Portable
    • Documentation required
Qualified Evaluator

1610.3 Definitions

• 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 this subpart for a signal person.

• Qualified Evaluator (not a third party)
  – 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.
Qualification Requirements

1618.2(c)

- Know and understand types of signals
- Be competent in application of types of signals
- Basic understanding of equipment operations and limitations, swinging and stopping loads, boom deflection
- Understand general requirements in OSHA
- **Oral or written test**
- **Practical test**
- Documentation must include which type of signaling the signal person is qualified
- **Effective Date: July 7, 2011**
Signaling Requirements

1617.1(b) & (c)

- Method of signals shall be agreed upon.
  - Hand, voice, radio, audible, special signals
- Anyone can give a stop or emergency signal.
- For voice signals, shall be through a dedicated channel.
- Operator, signal person and lift director (if there is one) shall be able to communicate in the language used.
• 1610.3: Definitions: Qualified rigger is a rigger who meets the criteria for a qualified person.
  – Qualified Person: 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.

• A qualified rigger is required for certain conditions
  – During assembly/disassembly (1611.2(r)(1)
  – Employees within the “fall zone” (1610.3)

• Effective Date: July 7, 2011
Maintenance & Repair Employee Qualifications

1618.3

• Operation of equipment limited to functions necessary to perform their work

• Requires one of the following:
  – Direct supervision by certified/qualified operator
  – Individual is familiar with operation, limitation, characteristics and hazards associated with the type of equipment

• Shall be a qualified person

• Effective Date: July 7, 2011
Training Requirements

• Who must be trained?
  – 1618.4(d)
    • The employer shall train each competent and qualified person applicable to their role.

• Who are Competent and Qualified persons?
  – Operators, Signal persons, Riggers, Maintenance and Repair employees, Inspectors, A/D directors

• How is this verified?
  – 1618.4(g)(1)
    • The employer shall EVALUATE each employee required to be trained under this section to confirm that the employee understands the information provided in the training.
Certification/Training Costs

• Who pays for the certification?
  – 1618.1(a)(3)
    • Whenever operator qualification or certification is required, the employer shall provide the qualification or certification at no cost to operators who are employed by the employer.

• Who pays for the training?
  – 1618.4(g)(3)
    • Whenever training is required, the employer shall provide the training at no cost to the employee.
Summary of Important Dates

- Effective Date of Rule: July 7, 2011
- Signal person Qualification Requirements: July 7, 2011
- Rigger Qualification Requirements: July 7, 2011
- Operator Training Requirements: July 7, 2011
- State Deadline for revised Regs “as effective as”: February 9, 2011 (6 months from August 9, 2010)
- Operator Certification/Qualification Requirements: July 7, 2015
Crane Rule Resources

- [http://www.nccco.org/training/OSHARuleResources.html](http://www.nccco.org/training/OSHARuleResources.html)
  - NCCCO Guide to OSHA’s Personnel Certification and Qualification Requirements
  - Frequently Asked Questions (FAQs)

- [http://www.dir.ca.gov/Title8/sb4a15.html](http://www.dir.ca.gov/Title8/sb4a15.html)
  - Is Cal-OSHA’s published text of the regulation
  - [http://www.dir.ca.gov/oshsb/CDAC.html](http://www.dir.ca.gov/oshsb/CDAC.html) is the site that will give you the history, including Cal-OSHA’s side by side analysis of the Federal Regulation

- Contact
  - Bob Hornauer, [bhornauer@nccco.org](mailto:bhornauer@nccco.org) or 209-586-4600
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