Crane Institute of America, Inc.
The Indicator
Information for the craning and rigging industries

Consensus Reached on Recommendation for OSHA Crane and Derrick Standard

WASHINGTON, D.C. – The Occupational Safety and Health Administration announced July 13 that its Crane and Derrick Negotiated Rulemaking Committee (CDAC) has reached consensus on language for a revised crane and derrick standard for construction. The draft will be submitted to the Assistant Secretary of Labor for Occupational Safety and Health, John L. Henshaw, and will continue through the rulemaking process.

"This is a significant step forward in protecting the thousands of workers who operate and work around cranes," said Henshaw. "The members of this committee were tasked with a formidable challenge – to develop and reach consensus on a revised crane and derrick standard in one year – and they achieved that ambitious task. We applaud their hard work and commitment to protecting workers and improving crane safety."

Key provisions of the CDAC's proposal include:

- The scope section covers a wide range of new types of cranes that have been developed over the past 30 years.
- A qualified person must address a list of key hazards associated with equipment assembly and disassembly.
- Ground conditions must be made adequate for crane setup to help prevent tipovers.
- To prevent electrocution, a leading cause of cranerelated fatalities, employers must choose from a list of options for ensuring that equipment does not come within a prescribed distance of power lines. When working closer than that distance, a specified list of measures must be taken.
- After a phase-in period, crane operators will have to be certified by either: (1) any crane operator testing organization approved by a nationally recognized accrediting agency, or (2) the employer's own qualification program, which must be audited by a testing organization approved auditor.
- Signal persons must meet specified qualification requirements.
- Updated requirements for cranes on barges.
- Safety devices, operational aids, signals, specific types of equipment (such as derricks and tower cranes), inspections, wire rope, prototype design and testing, crushing and overhead hazards, fall protection and equipment modification are also addressed.

The committee was established in June 2003 to function as a part of OSHA's rulemaking process to revise the existing standards for cranes and derricks in construction.

— compiled from press release of
U.S. Department of Labor, Office of Public Affairs

Additional details on key changes to crane and derrick standard, p. 2-6

States with certification or license requirements for crane operators, p. 6

OSHA Docket S030: CDAC Consensus Document - Section 1427 Operator Qualification and Certification, p. 7-12

Key items proposed to change in OSHA 1926.1400 (from 1926.550)

Section Description of Proposed Changes

1400 Scope
- Inclusions – Articulating boom cranes and side boom tractors to be added.
- Exclusions – Machines used primarily to move dirt, wreckers, digger derricks and mechanic's truck cranes.
- Limitations – Primarily applies to cranes 2,000 lbs and above.

1402 Assembly/Disassembly – Manufacturer's procedures are applicable.

1403 Assembly/Disassembly (General) – Must be supervised by competent/qualified person.
- All crew members must be instructed.
- A jib shall not be attached to equipment used for pile driving.

1406 Operation
- The employer must comply with manufacturer's procedures.
- The operator can leave the crane unattended under certain conditions and procedures.
- The operator shall not overload or be instructed to operate and overloaded crane.

1407 Authority to Stop Operations – When concerned for safety the operator shall have the authority to refuse to handle the load until a qualified person determines that safety is assured.

1408 Signals – Must be used when the load is not in operator view.

1409 Radio, Telephone or Other Electronic Transmission of Signals
- Signal transmission must be through a dedicated channel. (Multiple cranes/derricks and one or more signal persons may share a dedicated channel for the purpose of coordinating operations.)
- The operator's reception of signals must be by a hands-free system.

1410 Voice Signals – Shall contain three elements, given in the following order: (1) function/direction, (2) distance and/or speed, and (3) stop.

1411 Hand Signal Chart – Must be posted on the equipment or readily available at the job site.

1412 Signal Person Qualifications – Must be qualified by an employer evaluator or third party evaluator.

1413 Requirements for Equipment (with lifting capacity less than 2,000 lbs) – Only certain sections of the subpart apply.

1414 Safety Devices – Cranes shall have a level indicator, boom and jib stops, brake pedal locks, outrigger jack holding device.

14xx Operational Aids – If aids are not operating, temporary alternative measures can be used (the measures used before there was an aid).
- Category I Aids – Must be repaired no later than 7 days after the deficiency occurs, or within 7 days of receipt of parts if ordered within 7 days of the occurrence of the deficiency.
- Boom hoist limit device, luffing jib limit device, anti-two-blocking device.
- Anti-two-blocking exceptions – when cranes are used for dragline, clamshell, grapple, magnet, drop ball, container handling, concrete bucket, marine operations and pile driving.

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Key items proposed to change in OSHA 1926.1400 (from 1926.550)

Section Description of Proposed Changes

14xx Operational Aids (continued)

- Category II Aids – Must be repaired no later than 30 days after the deficiency occurs, but if the part is ordered within 7 days of the occurrence of the deficiency and is not received in time to complete the repair in 30 days, the repair shall be completed within 7 days of receipt of parts.
- Boom and jib angle and radius indicator, boom length indicator, load weight indicator (6,000+ lbs).
- Outrigger position sensor and hoist drum rotation indicator to be required on units manufactured after January 1, 2008.

1415 Inspections – Shall be done after modification, repair and assembly.

- Inspected daily or prior to each shift by a competent person. No documentation requirement.
- Monthly inspection same as daily but documented. Documentation retained at least 3 months.
- Annual/comprehensive inspection shall be done by a qualified person at least every 12 months and documented. Documentation retained for at least 12 months.
- Cranes idle for 3 months or more must undergo a monthly inspection by a qualified person before being put in service.

1416 Equipment Modifications – By manufacturer or registered professional engineer approval.

1417 Training – Shall be in accordance with 1422 but must include:

- Training in operations, signaling and working around power lines.
- Special training on friction rigs and those relying on brakes only to control hoists.
- Retraining done at the discretion of management.

1418 Wire Rope –

- Category I apparent deficiencies – kinks, crushing, unstranding, birdcaging, core problems, corrosion, heat effect, end connections.
- Category II apparent deficiencies – broken wires and strands, 5% diameter reduction.
- Category III apparent deficiencies – core problems with rotation resistant rope, power line contact, broken strands.
- Critical inspection areas: rotation resistant rope; boom hoist ropes; rope at flange points, crossover points and repetitive pickup points on drums; at end connections and equalizer sheaves.
- Removal from service:
    - Category I – Replace or shorten rope.
    - Category II – Consider manufacturer's specifications where they differ from this standard.
    - Category III – Replace or shorten rope.
- Alternative measures – Category II, if rope is deficient a qualified person can establish conditions to continue use with few restrictions.
- Monthly and annual/comprehensive rope inspection required with documentation.
- Exception: If it is infeasible to inspect ropes due to crane setup, a 6-month extension is allowed.

1419 Wire Rope Selection and Installation – Must be per crane or rope manufacturer, or qualified person.

- fiber core or rotation resistant rope is permitted on boom hoist reeving.
- Rotation resistant rope must have a design factor of 3.5:1 unless used for duty cycle work where a design factor of 5:1 is required.
- Exception: Rotation resistant rope can be used to hoist and lower a luffing jib.

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Key items proposed to change in OSHA 1926.1400 (from 1926.550)

Section Description of Proposed Changes

14xx Controlled Substances, Alcohol Use and Testing – According to provisions of 49 CFR 40, the employer shall institute a testing program of its operators for controlled substances and alcohol.

1422 Operator Qualification and Certification

- Operators must be qualified or certified.
  - Option 1: Certified by an accredited crane/derrick operator test, portable, and good for 5 years.
  - Option 2: Certification by an accredited educational institute or program, portable, and good for 5 years.
  - Option 3: Qualified by an audited employer program, not portable but good for 5 years.
  - Option 4: Qualified by the U. S. military, not portable, good for time determined by issuer.
- Trainees must work under the supervision and cannot work near power lines, hoist personnel, make multiple-crane lifts or lift over shafts, coffer dams or in tank farms.
- Trainees do not have to pass any tests to be a trainee.

1423 Keeping Clear of the Load

- Hoisting routes should minimize exposure to workers.
- Only qualified workers should enter the fall zone.
- No free fall operations are permitted when anyone is in the fall zone.

1424 Fall Protection

- Lattice boom cranes manufactured after January 1, 2008 must have a walkway on the boom(s).
- Employer shall provide and ensure use of fall protection for non-assembly/disassembly work if more than 6 feet above a lower level.
- Employer shall provide and ensure use of fall protection for assembly/disassembly work if more than 15 feet above a lower level.
- A fall arrest system can be anchored to a crane hook.

1425 Hoisting Personnel

- Includes boom tip mounted baskets.
- A personnel platform is not required for: hoisting employees in and out of drill shafts up to 8 feet in diameter, pile driving operations, and marine hoisted personnel transfer.
- There are conditions for the exemptions above.
- Except for the above it is the same as the 1926.550.

1428 Ground Conditions

- The controlling entity (employer) shall determine if the ground is firm, level and if supporting material is required.

1429 Work Area Control

- The swing radius of the counter weight and rotating superstructure must be guarded.
- If unable to erect barriers install warning signs.
- When there are multiple cranes within the working radius a control system must be instituted.

continued >

Key items proposed to change in OSHA 1926.1400 (from 1926.550)

Section Description of Proposed Changes

1430 Power Line Safety (up to 350 kV)
- An expanded B30.5
- Proximity alarm, spotter, range control warning device, automatic range limiting device (LMI) or insulated link can be used when working near power lines.

14xx Power Line Safety (over 350 kV)
- Like B30.5

14xx Power Line Safety (all voltages)
- Like B30.5

14xx Power Line Safety – Equipment in Transit
- Like B30.5

1432 Design, Construction and Testing
- Requirements apply to cranes with capacities of at least 2,000 lbs.
- Incorporates ASME B30.5 (2000) and addenda B30.5a (2002).
- Hooks shall have latches unless approved by a qualified person or where there are no unqualified personnel in the fall zone.

1433 Floating Cranes/Derricks and Land Cranes/Derricks on Barges
- A pontoon or barge/vessel list (or trim) measuring device is required.
- Wind speed and direction must be measured.
- An anti-two-block device is required when hoisting personnel or hoisting over coffer dams.
- Inspections required per shift, weekly, monthly and annually.
- Quadrennial inspection (every 4 years) on the internal portion of vessel or flotation device.
- When working with divers use hoisting personnel rules.
- Land cranes must be secured to the barge, corralled, on rails or use a centerline cable system.
- Exception: Cranes may move around on the barge with some restrictions.

1435 Free Fall and Controlled Load Lowering (concerning equipment with boom designed to free fall)
- Use is prohibited when hoisting personnel, when someone is in the fall zone, when load or boom is over power lines or when load is over a shaft or coffer dam.
- Use if permitted if crane was manufactured prior to October 31, 1984

1436 Multiple-Crane/Derrick Lifts – Supplemental Requirements
- Must be planned.

1437 Tower Cranes
- Much like the B30.3 but not incorporated.

1438 Derricks
- Much like the B30.6 but not incorporated.

1439 Overhead and Gantry Cranes
- Much like the B30.2; incorporates much of 1910.179 and B30.2 (2001).

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Key items proposed to change in OSHA 1926.1400 (from 1926.550)

Section Description of Proposed Changes

1440 Dedicated Pile Drivers
- No anti-two-block device required.
- Load weight/capacity device required for units manufactured after January 1, 2008.
-

14xx Supplemental Requirements for Side-Boom Cranes
- Uses the B30.14 and SAE.

States with Certification or License Requirements
Fourteen states plus the District of Columbia have enacted certification or license requirements for crane operators. These meet or exceed OSHA requirements. The proposed changes to the OSHA subpart on cranes and derricks will have no effect on this list:

California
Connecticut
Hawaii
Massachusetts

Minnesota
Montana
Nevada
New Jersey
New Mexico
New York
Oregon
Rhode Island
Utah
Washington (as of 2010)
West Virginia

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1427 Operator qualification and certification.

(a) The employer must ensure that, prior to operating any equipment covered under Section 1400, the operator is either qualified or certified to operate the equipment in accordance with one of the Options in paragraphs (b) - (e), or is operating the equipment during a training period in accordance with paragraph (f).

(a) Option (1) : Certification by an accredited to certify testing organization.

For a testing organization to be considered accredited to certify operators under this Subpart, it 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.

(ii) Administer written and practical tests that:

(A) Assess the operator applicant regarding, at a minimum, the knowledge and skills listed in (j)(1) and (2).
(A) Provide different levels of certification based on equipment capacity and type.

(iii) Have procedures for operators to re-apply and be re-tested in the event an operator applicant fails a test or is decertified.

(iv) Have testing procedures for re-certification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in ti)(1) and (2).

(v) Have its accreditation reviewed by the nationally recognized a agency at least every three years.

(c) Option (3): Qualification by an audited employer program. The employer's qualification of its employee shall meet the following requirements:

(1) The written and practical tests shall be either:

(i) Developed by an accredited crane/derrick operator testing organization (see paragraph (b)), or

(ii) Approved by an auditor in accordance with the following requirements:

(A) The auditor is certified to evaluate such tests by an accredited operator testing organization (see paragraph (b)).
(A) The auditor is not an employee of the employer.
(C) The approval shall 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 (j)(l)and (2).

(2)Administration of tests.

(i) The written and practical tests shall be administered under circumstances approved by the auditor as meeting nationally recognized test administration standards.

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(i) The auditor shall be certified to evaluate the administration of the written and practical tests by an accredited crane/derrick operator testing organization (see paragraph (b)).

(i) The auditor shall not be an employee of the employer.

(i) The audit shall be conducted in accordance with nationally recognized auditing standards.

(3) The employer program shall be audited within 3 months of the beginning program and every 3 years thereafter.

(4) The employer program shall have testing procedures for re-certification designed to ensure that the operator continues to meet the technical knowledge requirements in (j)(1) and (2). The re-certification procedure shall be audited in accordance with paragraph (c)(1) and (2).

(5) Deficiencies. If the auditor determines that there is a significant deficiency ("deficiency") in the program, the employer shall ensure that:

(i) No operator is qualified until the auditor confirms that the deficiency has been corrected.

(i) The program is audited again within 180 days of the confirmation that the deficiency was corrected.

(i) 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.

(i) Records of the audits of the employer's program are maintained by the auditor for three years and are made available by the auditor to the Secretary of Labor or her designated representative upon request.

(6) A qualification under this paragraph is:

(i) Not portable.

(i) Valid for 5 years.

(d) Option (4). Qualification by the US.military.

(1) For purposes of this Section, an operator is considered qualified if he/she has a current operator qualification issued by the U.S. military for operation of the equipment.

(2) A qualification under this paragraph is:

(i) Not portable.

(i) Valid for the period of time stipulated by the issuing entity.

(e) Option (5). 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 co government accredited crane/derrick operator testing organization if the paragraph (e)(2) are met.

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(2) Licensing criteria.

(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 (j)(1) and (2).

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

(i) The government authority that oversees the licensing department/office, has determined that the requirements in paragraphs (e)(2)(i) and (ii) have been met.

(i) The licensing department/office has testing procedures for re-certification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in (i)(1) and (2).

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

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

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

(f) Pre-qualification/certification training period.

(1) An employee who is not qualified or certified under this Section is permitted to operate equipment where the requirements of paragraph (f)(2) are met.

(2) An employee who has passed neither the written nor practical tests required under this Section is permitted to operate equipment as part of his/her training where the following requirements are met:

(i) The employee (“trainee/apprentice”) shall be provided with sufficient training prior to operating the equipment to enable the trainee to operate the equipment safely under limitations established by this Section (including continuous supervision) and any additional limitations established by the employer.

(i) The tasks performed by the trainee/apprentice while operating equipment shall be within the trainee’s ability.

(i) *Supervisor*. While operating the equipment, the trainee/apprentice shall be continuously supervised by an individual (“operator's supervisor") who meets the following requirements:

(A) The operator’s supervisor is an employee or agent of the trainee/apprentice’s employer.

(A) The operator’s supervisor is either a certified operator under this Section, or has passed the written portion of a certification test under one of the Options in paragraphs (b) - (e), and is familiar with the proper use of the equipment’s controls.

(A) While supervising the trainee/apprentice, the operator’s supervisor performs no tasks that detract from the supervisor’s ability to supervise the trainee/apprentice.

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(A) For equipment other than tower cranes: the operator's supervisor and the trainee/apprentice 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 supervisor and the trainee/apprentice shall be in direct communication with each other.

iv) *Continuous supervision*. The trainee/apprentice shall be supervised by the operator's supervisor at all times, except for short breaks where the following are met:

(A) The break lasts no longer than 15 minutes and there is no more than one break per hour.

(A) Immediately prior to the break the operator's supervisor informs the trainee/apprentice of the specific tasks that the trainee/apprentice is to perform and limitations that he/she is to adhere to during the operator supervisor's break.

(A) The specific tasks that the trainee/apprentice will perform during the operator supervisor's break are within the trainee's/apprentice's abilities.

(i) The trainee/apprentice shall not operate the equipment in any of the following circumstances:

(A) If any part of the crane, load line or load (including rigging and lifting accessories), if operated up to the crane's maximum working radius in the work zone (see paragraph 1408(a)(l)), could get within 20 feet of a power line that is up to 350 kV, or within 5 power line that is over 350 kV.

(A) If the equipment is used to hoist personnel,

(A) In multiple-crane lifts.

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

(A) For multiple-lift rigging, except where the operator's supervisor determines that the trainee's/apprentice's skills are sufficient for this high-skill work.

(g) Under this Section, a testing entity is permitted to provide training as well as testing services as long as the criteria of the applicable accrediting agency (in the Option selected) for an organization providing both services are met.

(h) Written tests under this Section are permitted to be administered verbally, with answers given verbally, where operator candidate:

(1) Passes a written demonstration of literacy relevant to the work.

(1) Demonstrates the ability to use the type of written manufacturer procedures e class/type of equipment for which the candidate is seeking certification.

(i) [Reserved}.

(j) *Certification criteria*. Qualifications and certifications must be based, at a minimum, on the following:

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(1) A determination through a written test that:

(i) The individual knows the information necessary for safe operation of the specific type of equipment the individual will operate, including the following:

(A) The controls and operational/performance characteristics.

(A) Use of, and the ability to calculate (manually or with a calculator), load/capacity information on a variety of configurations of the equipment,

(A) Procedures for preventing and responding to power line contact.

(A) Technical knowledge similar to the subject matter criteria listed in Appendix Q applicable to the specific type of equipment the individual will operate. Use of the Appendix Q criteria meets the requirements of this provision.

(A) Technical knowledge applicable to:

(1) The suitability of the supporting ground and surface to handle expected loads.

(1) Site hazards.

(1) Site access.

(D) This Subpart, including applicable incorporated materials.

(i) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in paragraph (j)(l)(i).

(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 audible observation, the items listed in section 1412(d)(shift inspection).

(i) Operational and maneuvering skills.

(i) Application of load chart information.

(i) Application of safe shut-down and securing procedures.

(k) *Phase-in*.

(1) As of the effective date of this standard, until four years after the effective date of the standard, the following requirements apply:

(i) Operators of equipment covered by this standard are required to be competent to operate the equipment safely.

(ii) Where an employee assigned to operate machinery does not have the required knowledge or ability to operate the equipment safely, the employee shall be provided with the necessary

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training prior to operating the equipment. The employer shall ensure that the operator is evaluated to confirm that he/she understands the information provided in the training.

(2) The effective date of paragraphs (a) -0') and (m) is [date of the standard].

(l) [Reserved].

(m) *Definitions*.

(1) *"Portable."* Any employer of an operator with a certification that is portable under this Section meets the requirements of paragraph (a) with respect to that operator.

(2) *"Not portable."* Where an operator has a qualification that is not portable under this Section, the qualification meets the requirements of paragraph (a) only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.

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Docket SO30 EX. 68-14

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