



National Association of Home Builders

Overview of the OSHA Crane and Derricks in Construction; Final Rule

On August 9, 2010 the Federal Occupational Safety and Health Administration (OSHA) issued the long-awaited Crane and Derricks in Construction Final Rule. OSHA estimates that approximately 267,000 construction, crane rental and crane certification establishments employing about 4.8 million workers will be affected by the final rule, which is expected to prevent 22 crane-related fatalities and 175 non-fatal injuries each year.

The requirements of this rule will become effective **November 8, 2010** with a few notable exceptions with delayed effectiveness (e.g. crane operator certification).

The new rule has a myriad of new requirements and applies to a wide range of employers, including general contractors and it is likely to have an impact on the home building industry because this standard covers how cranes are used in residential construction. The OSHA Crane and Derricks in Construction rule contains many new requirements for crane operators, riggers, signalmen, and controlling entities.

Some of the key provisions of the Crane and Derricks in Construction final rule include:

Scope of the Rule: This rule applies to power operated equipment (e.g. cranes) that can hoist, lower, and horizontally move a suspended load with a load rating capacity over 2000 pounds when used in construction, such as: articulating cranes (e.g. knuckle-boom cranes); crawler cranes; mobile cranes (such as wheel mounted, rough-terrain, all-terrain, commercial truck-mounted, and boom truck cranes); and multi-purpose machines when configured to hoist and lower (by means of a winch or hook).

Exclusions: This rule **does not** cover forklifts, excavators, backhoes, track loaders, automotive wreckers / tow trucks when used to clear wrecks and haul vehicles, machinery that uses a come-a-long to hoist, and articulating/knuckle-boom truck cranes when used for material delivery on construction sites when they are used to transfer materials from the truck to the ground or when transferring materials or building supplies (i.e. drywall, shingles, plywood) onto the structure.

Controlling Entities: Controlling entity (i.e. general contractors) must ensure that the ground conditions are sufficient to support the equipment (including, slope, compaction, and firmness).

- Controlling entity duties include, but are not limited to:
 - Ensure that ground conditions are firm, drained, and graded to a sufficient extent so that the equipment manufacturer's specifications for adequate support and degree of level are met.
 - Inform crane operator of the locations of hazards beneath the equipment (such as voids, tanks, utilities) if those hazards are identified in documents that are in possession of the controlling entity.

Crane Operator Certification:

- New crane operator certification requirements: Employers have up to 4 years from the November 8, 2010 effective date to ensure that their operators are qualified or certified, unless they are operating in a state or city that has operator requirements.
 - Employers must pay for certification/qualification of their currently uncertified/unqualified operators.
 - Options to obtain certification:
 - **Option 1:** Certification by an accredited crane operator testing organization.
 - Must be accredited by a nationally recognized accrediting agency.
 - Administer written and practical tests, with specific curriculum criteria outlined in the rule.
 - A certification issued under this option is valid for 5 years.
 - **Option 2:** Qualification by an audited employer program
 - This program must be developed by an accredited crane operator testing organization, or
 - Approved by an auditor certified to evaluate by an accredited crane operator testing organization.
 - Audited within 3 months of beginning the program and at least every 3 years thereafter.
 - **Option 3:** Qualification by the U.S. military.
 - **Option 4:** Licensing by a government entity.
 - Must meet the new rule's criteria to be considered a government accredited crane operator testing organization.

Signal person qualifications:

- Prior to giving any signals the employer must ensure that each signal person meets the qualification requirements listed below.
 - **Option 1:** Third party qualified evaluator awards documentation to signal person showing that they meet the qualification requirements listed in this section.
 - **Option 2:** Employer's qualified evaluator (similar requirements to employer crane operator evaluator) assesses the individual and determines that they meet the qualification requirements, and provides documentation.
 - Qualification requirements:
 - Know and understand the types of signals used.
 - Be competent in the application of the type of signals used.
 - Have basic understanding of equipment operation and limitations, including the crane dynamics involved in swinging and stopping loads and boom deflection from hoisting loads.
 - Know and understand the relevant requirements of this standard.
 - Demonstrate that they meet the requirements of this section through an oral or written test and through a practical test.

Qualified Rigger: Employers must use a qualified rigger for rigging operations during assembly/disassembly of cranes and when workers 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, the materials must be rigged by a qualified rigger.

- A qualified rigger must meet the criteria for a qualified person- a person who by possession of a recognized degree, certificate, or professional standing, or by extensive knowledge, training, and experience, successfully demonstrates the ability to solve/resolve problems related to the subject matter, the work, or the project.

Procedures for Working in the Vicinity of Overhead Power Lines: Before beginning equipment operations near overhead power lines (**up to 350 kV**), the employer must:

- Identify the work zone by either: 1. Demarcating boundaries (such as flags, or a range limit device or range control warning device) and prohibit the operator from operating the equipment past those boundaries, or 2. Define the work zone as the area 360 degrees around the equipment’s maximum working radius.
- Determine if any part of the equipment, load line or load, if operated up to the maximum working radius in the work zone could get closer than 20 feet to a power line. If so meet the requirements in Option 1, 2, or 3:
 - **Option 1:** Deenergize and ground, confirm with the utility owner/operator.
 - **Option 2:** Ensure that no part of the equipment, load line, or load gets closer than 20 feet to the power line by implementing the measures specified in the preventing encroachment/electrocution section below.
 - **Option 3:** Use OSHA’s Table A clearance: 1. Determine the line’s voltage and the minimum approach distance permitted under Table A (below). 2. Determine if any part of the equipment, load line, or load while operating to the equipments maximum radius could get closer than the min. approach distance of the power line. If so, then must follow the preventing encroachment/electrocution section below.
 - Preventing encroachment/electrocution: must,
 - Conduct a planning meeting with the operator and other workers in the area to review the location of power line(s) and steps to prevent encroachment/electrocution.
 - If tag lines are used, they must be non-conductive.
 - Erect and maintain elevated warning line, barricade, or line of signs, in view of operator at 20 feet from the power lines, or minimum approach distance from Table A.
 - Implement at least one of the additional protective measures found in 1926.1408(b)(4).
 - Employer must train each operator and crew member on:
 - The procedures to be followed in the event of electrical contact with a power line.
 - Power lines are presumed energized unless the utility owner/operator confirms the power line has been deenergized and visibly grounded.
 - Power lines are presumed to be uninsulated unless utility owner/operator or registered engineer confirms that a line is insulated.
 - The limitations of an insulating link/device, proximity alarm, and range control device, if used.
 - Procedures to properly ground equipment and limitations of grounding.

Table A – Minimum Clearance Distances	
Voltage (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	As established by the utility owner/ operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution.

Training Requirements: The training requirements in the final rule are extensive. OSHA sets forth both references to training criteria that is required by the rule and requirements that are not specified in the standard. Most importantly, OSHA requires that employers evaluate employee's understanding of their training. Some additional training requirements include:

- Training in several areas for safe operation of cranes on job sites, which include – power line safety, recognizing hazards (i.e. swing radius and pinch points).
- Competent persons and qualified persons must be trained in the requirements of this standard applicable to their respective roles.
- Employees who will be assigned to work as signal persons must be trained to meet the requirements of the signal person qualifications.
- Crane Operator Training.

Use of “J” Hook for Wood Roof Trusses: The final rule requires the use of hooks with self-closing latches or their equivalent, to prevent accidental failure of the hooks. However, the use of “J” type hooks is permitted for setting wooden trusses. This exception in the rule is designed to enable the truss to be unhooked without the need for a worker to go out on the truss and thus avoiding a fall exposure hazard.

Inspections: All cranes and wire hoisting rope are required to be inspected periodically including after any covered equipment has been modified or repaired, upon completion of being assembled (post-assembly), each shift/daily, monthly, and annually/comprehensive scheduled inspections.

Keeping Clear of the Load: Workers must be kept clear of the fall zone, which includes but is not limited to the area directly beneath the load where the hoisted materials could fall. Hoisting routes must also minimize exposures to workers of overhead loads. Additionally, the swing radius of the crane (i.e. area of the crane rotating superstructure which could strike a worker) must be protected with barriers/warning lines.

Safety Devices and Operations Aids: Safety devices and operations aids on cranes, such as crane level indicator, boom and jib stops, horns, boom hoist limiting device, anti two blocking device, boom angle or radius indicator, and load weighing device, are required on cranes and must be properly operating.

State Plan States: State Plans must issue job safety and health standards that are “at least as effective as” comparable federal standards within 6 months of federal issuance. However, State Plans also have the option to promulgate more stringent standards or standards covering hazards not addressed by federal standards.

More information on OSHA's Final Rule on Crane and Derricks in Construction can be found at www.osha.gov/cranes-derricks.

If you should have any questions about this OSHA rule or other construction safety issues, please feel free to contact the National Association of Home Builders (NAHB) Labor, Safety and Health Policy staff: Rob Matuga at 202-266-8507 / rmatuga@nahb.org or Marcus Odorizzi at 202-266-8590 / modorizzi@nahb.org.