

## Summary of Comments and Agency Decisions

**Title: Division 3, Construction – Subdivision CC, Cranes and Derricks**

**Administrative Order Number: 1-2011**

**Adopted Date: February 9, 2011**

**Effective Date: February 9, 2011**

### **Summary:**

The Oregon Occupational Safety and Health Administration revised its Crane and Derrick construction rules on February 9, 2011. Oregon OSHA adopted the Federal OSHA changes to the crane and derrick construction standard as they appear in the August 9, 2010 Federal Register with the exception of specific provisions found in section 1926.1423 Fall Protection, and a clarifying note in section 1926.1408 Power Line Safety.

Other subdivisions of Division 3, Construction were affected by the new crane and derrick construction rules. Subdivision O, Motorized Vehicles, 1926.600 paragraph (a)(6) was not adopted in Oregon. It was replaced by 437-003-3600 Equipment, changed Federal OSHA's word "crane" to Oregon OSHA's word "equipment".

These changes revise the construction industry crane and derrick rules and are found in new subdivision CC of 1926.

### **Summary of the changes:**

This preamble is a complimentary document to the Federal Register Vol. 75, No. 152 published, August 9, 2010.

[http://www.osha.gov/FedReg\\_osha\\_pdf/FED20100809.pdf](http://www.osha.gov/FedReg_osha_pdf/FED20100809.pdf)

### **1926.1400 Scope**

Federal OSHA describes the scope of the rule with a functional description ("power-operated equipment used in construction that can hoist, lower, and horizontally move a suspended load") and a nonexclusive list of the types of existing equipment being covered. They attempt to provide the clearest possible notice identifying the equipment that is covered by the standard while including new and/or other existing equipment that is similar to the listed examples in the rule.

This standard applies to power-operated equipment when used in construction that can hoist, lower and horizontally move a suspended load. The definition of "construction work" in the rule means work for construction, alteration, and/or repair, including painting and decorating.

Construction work is not limited to new construction. It can include the repair of existing facilities or the replacement of structures and their components. For example, the replacement of one utility pole with a new, identical pole would be maintenance; however, if it were replaced with an improved pole or equipment it would likely be considered construction.

In applying the concept of one-for-one replacement versus improvement, the scale and complexity of the project are relevant. This takes into consideration concepts such as the amount of time and material required to complete the job. For example, if a steel beam in a building had deteriorated and was to be replaced with an identical new beam, the project would be considered a construction repair rather than maintenance because of the replacement project's scale and complexity.

The physical size of an object can be a factor if its replacement requires significantly altering the structure or equipment that the object is within. This is another example of how the project scale and complexity is relevant – if the process of replacement is a large-scale project, then it is likely to be construction. It is not the classification of what you are working on as "equipment" or "structure" that is significant, but rather the project's scale and complexity.

There is no regulatory definition for "maintenance," nor a specified distinction between terms such as "maintenance," "repair," or "refurbishment." "Maintenance activities" have commonly been defined in dictionaries as making or keeping a structure, fixture or foundation (substrates) in proper condition in a routine, scheduled, or anticipated fashion. In some OSHA directives, maintenance is described as those activities that involve "keeping equipment working in its existing state or preventing its failure or decline".

### **Exclusions:**

#### Digger derrick

When digger derricks are used in the operation and maintenance of existing electric power lines and telecommunication work they are not subject to the crane construction rules. Digger derricks are a specialized type of equipment and are specifically intended and designed to install utility poles. They are equipped with augers to drill holes and a hydraulic boom to lift and set poles. Electric utilities also use the boom to place objects and handle materials being installed on or removed from the poles, as well as other general lifting purposes, such as setting transformers. The rule excludes digger derricks used for augering holes for poles carrying electric or telecommunication lines, placing and removing those poles, and for handling associated materials to be installed on or removed from those poles.

Some poles carrying electric or telecommunication lines also have street lights installed on them. When using a digger derrick to install lights on these poles the exclusion would apply to the extent that the employer complies with either 1910.268 or 1910.269.

For lighting installed on poles without electric or telecommunication lines, such as above ground poles attached to a concrete base, the exclusion is not applicable.

When digger derricks are used for general lifting purposes in construction work, the hazards are the same as when other equipment of similar capabilities are used for general lifting, the exclusion does not apply.

The term “digger derrick” is clearly understood in the industry and is the only term used by industry to describe that particular equipment.

The ASME B30.5–2004 Mobile and Locomotive Cranes excluded digger derricks when used for energized electrical line service” from the scope of that industry standard. ANSI/ASSE A10.31–2006, is the industry standard specific to Digger Derricks.

So despite its name, a “digger derrick” is not a “derrick” as defined in the rule. The requirements applicable to derricks do not apply to digger derricks in subdivision CC.

## Forklifts

This crane standard applies to equipment that can hoist, lower and horizontally move a suspended load. The standard does not apply to forklifts used exclusively in their most traditional form of placing the forks underneath a load and using them to lift or lower the load. With a “suspended” load, the forks (or modified lifting device) would be above the load.

Forklifts traditionally do not use components in the same manner as other equipment covered by this standard. In contrast, a piece of equipment covered by this standard manipulates suspended loads by using components such as winches, booms, jibs, gantries, and trolleys. Outriggers and stabilizers are also often needed to stabilize the equipment while hoisting a load.

Forklifts can be modified by adding an after-market boom and hook attachment in addition to the fork attachment. A forklift with a boom attachment affixed to its forks that uses a winch and a hook to raise and lower the load like a crane would be covered by subdivision CC. A forklift would be excluded from the coverage of subdivision CC when its sole means of suspending a load is a chain, nylon strap or other rigging wrapped around the forks, otherwise known as free rigging.

The exclusion makes reference to the use of a forklift that is configured to hoist and lower (by means of a winch or a hook). It intended to say by means of a winch **and** a hook. When the forklift hoists, lowers and horizontally moves a suspended load by using the hydraulics of the lift without the aid of a winch it is excluded from coverage.

#### Material delivery

Delivery companies that typically supply material to a construction project have always been considered a general industry activity when the material or delivery is placed on the ground. When materials are delivered to the site with a crane and the crane holds, supports or stabilizes the material to facilitate a construction activity they will be subject to the requirements of this rule.

When a delivery is made to a construction site by a knuckle boom truck crane that incorporates a fork/cradle at the end of the boom and a properly functioning automatic overload prevention device (OPD), that crane can transfer building supply sheet goods or building supply packaged materials from the truck crane onto a structure. That specific activity is not subject to subdivision CC.

#### **1926.1402 Ground conditions**

New to the construction industry is the idea of requiring the controlling entity to ensure the ground has the ability to support the equipment (crane), including slope, compaction, and firmness. The ground conditions must be firm, drained, and graded to a sufficient extent, so that, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met.

#### **1926.1408 Power line safety**

There are a number of sections in Oregon OSHA rules that address power line safety. They are commonly referred to as the "10ft rule". The 10ft rule requirements have grown from fewer than ten paragraphs to being detailed in five sections, to include assembly/disassembly, operations near power lines above and below 350Kv, getting closer than 10 feet and while traveling under power lines.

The simple and basic difference in the new rule, besides detail, is a planning and assessment requirement of construction work locations regarding power line safety.

First, the employer must identify the work zone, assess it for power lines, and determine how close the crane could get to them.

The employer has the option of doing this assessment for an area 360 degrees around the crane or for a more limited demarcation area.

When demarcating the boundaries, you must include using flags or devices such as a range limit device or range control warning device. Employers are not permitted to use existing landmarks to demarcate work zone boundaries unless they are marked. For example, a line of trees would be insufficient. However, adding flags to those trees would be sufficient because the flags would serve as a reminder that the trees are located along a boundary that the operator must not breach.

Second, if the assessment shows that the crane could get closer than a trigger distance—20 feet for lines rated up to 350 kV—then requirements for additional action are required.

Encroachment prevention measures have to be implemented to prevent the crane from breaching a minimum clearance distance, unless the power lines are de-energized and grounded or the crane maintains a 20 foot distance at all times.

More often the rule will allow operators to get as close as 10 feet from the power line depending on the power lines voltage. The operator will be required to know the voltage, which typically requires communication with the service provider.

The construction crane advisory group suggested one change to this section. The group recognized and suggested applying direct current (DC) voltages to the power line safety encroachment distances. In tables “A” and “T” Oregon OSHA noted that “nominal direct current (DC) voltages apply”.

Sections 1926.1412 Inspections through section 1926.1422 Signals were not changed from the federal standards, some highlights from these sections are:

### **1926.1412 Inspections**

Crane inspections are required each shift (competent person), monthly (competent person) and annually (qualified person). Documentation is required for both monthly and annual crane inspections. Equipment not in regular use (idle for 3 months or more) must be inspected under the monthly provisions by a qualified person before initial use or reuse.

### **1926.1413 Wire rope inspections**

The wire rope on the crane is required to be inspected each shift before use for each section likely to be used. Monthly inspections must be documented and annual inspections must encompass a complete and thorough inspection of the entire length.

### **1926.1415 Safety devices**

All cranes must have a properly working horn and nearly all cranes must have a level indicator (an accurate four foot carpenters level), boom stop, and jib stop.

### **1926.1416 Operational aids**

Anti two-blocking devices are required on all telescopic cranes manufactured after February 28, 1992. Lattice boom cranes manufactured after the same date must have an automatic prevention device or a warning device. After November 8, 2011 lattice boom cranes must be equipped with a device that automatically prevents damage where two blocking could occur.

### **1926.1417 Operation**

Requires compliance with all applicable manufacturer procedures, having an operator's manual in the cab and prohibition of personal cell phone use during operations.

### **1926.1418 Authority to stop operation**

Operators must have authority to stop operations for any and all safety concerns.

### **1926.1419 – 1422 Signal – general requirements, radio, voice and hand signals**

Signals must be by hand, voice, audible or new signals. Only one person may signal at a time, unless safety issues arise.

### **1926.1423 Fall Protection**

Falls have traditionally been the leading cause of deaths among construction workers. It was determined that safety would be enhanced by addressing the problem of fall hazards associated with cranes and derricks, and that putting all such requirements in subdivision CC, would make it easier for employers to readily determine the applicable fall protection requirements.

Oregon OSHA's advisory group agreed that fall protection was necessary and adopted the fall protection requirements for Oregon. The Oregon OSHA advisory group did not feel, however, that different fall heights for different crane configurations were necessary. Instead, the group felt that one fall height for all crane related fall hazards would be more appropriate. Oregon OSHA established one fall height of ten feet and replaced certain Federal rules with Oregon Administrative Rules. Ten feet was established to remain consistent with those fall protection trigger heights found in Subdivision M of the construction rules.

Oregon OSHA, in conjunction with the advisory group, felt that allowing employers to use the load line as an anchor would be appropriate with added clarification and constraints. Oregon OSHA replaced 1926.1423 with 437-003-1423 Fall Protection, which requires a qualified person be involved, closer proximity of the operator, that no other load is suspended while using the crane for fall protection, and that the crane must not be moved.

### **1926.1425 Keeping clear of the load**

This section emphasizes the requirement of using a qualified rigger when employees are hooking, unhooking, guiding or connecting the load to a component. Two definitions were necessary when identifying the need for qualified riggers.

A qualified rigger is defined as a rigger who meets the criteria for a qualified person, which also by definition means a person who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, successfully demonstrates the ability to solve/resolve problems relating to the subject matter, the work, or the project.

The second definition defines a fall zone as 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.

### **1926.1427 Operator qualifications and certifications**

After November 10, 2014 every operator subject to this rule must be operator qualified and certified for the cranes they operate. There are four options listed in the rules.

Options 3 and 4 may not be an option available to Oregon employers. Option 3 describes qualifications for employees that have been qualified by the US military. This option is not portable for outside use other than military purposes, making this option void for Oregon employers based on Oregon OSHA's lack of jurisdiction over the US military. Option 4 is also not portable and Oregon OSHA is not aware of any licensing done by a government entity in the state.

Options 1 and 2 contain reasonable means for meeting the qualification and certification requirements. After discussing the issues with the Oregon OSHA crane advisory group, they felt the only reasonable option is Option 1 which is certification through an accredited crane operator testing organization.

Until the 2014 phase-in date in Oregon, the current training requirement in Oregon Administrative Rule 437-003-0081 will remain in effect.

### **1926.1428 Signal person qualifications**

Effective immediately any person signaling a crane in conjunction with construction work must be qualified.

To be qualified individuals must know and understand the type of signals they will use. Qualified signal persons must be competent in the application of the type of signals used. If hand signals are used, the signal person must know and understand the Standard Method for hand signals. Qualified individuals must 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. They must know and understand the relevant requirements of the signal rules that are found in 1926.1419 through 1422 and 1926.1428. All of these requirements must be done through a practical test and an oral or written test.

Employers must have individuals qualified by a third party evaluator or by an employer's qualified evaluator, either method is acceptable. Documentation for whichever option is used must be available (physically or electronically) at the construction site while the signal person is employed by the employer. The documentation must specify each type of signaling for which the signal person meets the qualification requirements.

### **1926.1429 Qualifications of maintenance & repair employees**

Although maintenance and repair activities are not subject to the construction crane rules, this section describes minimum requirements for maintenance personnel that may have to operate a crane they are repairing. They are allowed to operate the crane, for functions necessary to the repair work, under the supervision of a qualified operator. They are also allowed to operate the crane if they are familiar with the crane and its associated hazards.

The remainder of the sections were adopted by Oregon OSHA as they appeared in the Federal Register Vol. 75, No. 152 published, August 9, 2010.

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