Title 09
MARYLAND DEPARTMENT OF LABOR
Subtitle 12 DIVISION OF LABOR AND INDUSTRY
Chapter 26 Crane Safety

Authority: Labor and Employment Article, §§2-106(b)(4), 5-104, and 5-312, Annotated Code of Maryland

.01 Purpose.

The purpose of this chapter is to prevent incidents that result in property damage, injury, and death, related to the operation of cranes when used in construction and demolition.

.02 Scope.

A. Except as provided in §C of this regulation, this chapter applies to power operated equipment, when used in construction and demolition, that can hoist, lower, and horizontally move a suspended load.

B. This chapter applies to all crane operators, signal persons, riggers, and crane operator trainees, and to the erection, operation, and dismantling of cranes used in construction and demolition.

C. This chapter does not apply to the following equipment:

(1) Machinery included in §A of this regulation while it has been converted or adapted for a non-hoisting/lifting use, and when used with chains, slings, or other rigging to lift suspended loads. Such conversions/adaptations include, but are not limited to, power shovels, excavators, and concrete pumps;

(2) Automotive wreckers and tow trucks when used to clear wrecks and haul vehicles;

(3) Digger derricks:

(a) Used for auguring holes for poles carrying electric and telecommunication lines, placing and removing the poles, and for handling associated materials to be installed on or removed from the poles;

(b) Used in electric power generation, transmission, and distribution work subject to 29 CFR Part 1926, Subpart V, which shall comply with 29 CFR §1926.950; and

(c) Used in construction work for telecommunication service, as defined at 29 CFR §1910.268(s)(40), which shall comply with 29 CFR §1910.268;

(4) Machinery originally designed as vehicle-mounted aerial devices such as the type used for lifting personnel and self-propelled elevating work platforms;

(5) Powered industrial trucks, such as forklifts, except when configured to hoist and lower by means of a winch or hook and horizontally move a suspended load;

(6) Mechanic's truck with a hoisting device when used in activities related to equipment maintenance and repair;

(7) Machinery that hoists by using a come-along or chainfall;

(8) Telescopic/hydraulic gantry systems;

(9) Stacker cranes;

(10) Dedicated drilling rigs;

(11) Gin poles when used for the erection of communication towers;

(12) Tree trimming and tree removal work; and

(13) Except as provided in §D of this regulation, articulating/knuckle-boom truck cranes when:

(a) Delivering material to a construction site when used to transfer materials from the truck crane to the ground, without arranging the materials in a particular sequence for hoisting; and

(b) Delivering material to a construction site when the crane is used to transfer building supply sheet goods, including sheets of sheetrock, plywood, and roofing shingles, or building supply packaged materials, including bags of cement, packages of roofing shingles, and rolls of roofing felt, from the truck crane onto a structure using a fork/cradle at the end of the boom, but only when the truck crane is equipped with a properly functioning automatic overload prevention device.

D. This chapter applies to articulating/knuckle-boom truck cranes when:

(1) The articulating/knuckle-boom crane is used to hold, support, or stabilize the material to facilitate a construction activity, such as holding material in place while it is attached to the structure;

(2) The material being handled by the articulating/knuckle-boom crane is a prefabricated component including, but not limited to, precast concrete members or panels, roof trusses such as wooden, cold-formed metal, steel, or other material, prefabricated building sections such as, but not limited to, floor panels, wall panels, roof panels, roof structures, or similar items;

(3) The material being handled by the articulating/knuckle-boom crane is a structural steel member such as steel joists, beams, columns, steel decking, bundled or unbundled, or a component of a systems-engineered metal building as defined in 29 CFR Part 1926, Subpart R; or

(4) The activity is not specifically excluded under COMAR 09.12.26.02C(13)(a)(b).

E. This chapter applies to the equipment covered by this standard unless specified otherwise.

F. The duties of controlling entities under this chapter include, but are not limited to, the duties specified in 29 CFR §1926.1402(c) and (e) and 29 CFR §1926.1424(b).

G. Where provisions of this chapter direct an operator, crewmember, or other employee to take certain actions, the employer shall establish, effectively communicate to the relevant persons, and enforce work rules to ensure compliance with such provisions.

H. For work covered by 29 CFR §1926.950, compliance with 29 CFR §1910.269(p) is deemed compliance with 29 CFR §§1926.1407—1926.1411.

.03 Definitions.

A. The definitions set forth in 29 CFR §1926.1401 apply to this chapter.

B. For the purpose of this chapter, the following terms have the meanings indicated.

(1) "ANSI" means the American National Standards Institute.

(2) "ASME" means the American Society of Mechanical Engineers.

(3) "ASSE" means the American Society of Safety Engineers.

(4) "Commissioner" means the Commissioner of Labor and Industry.

(5) “Crane” includes all equipment covered by this regulation.

(6) “Crane operator” means a person who operates powered equipment covered by this regulation.

(7) “Crane operator trainee” means a person who is engaged in a structured training program under the direct supervision of a crane operator who meets the requirements of this chapter.

(8) “Crew member” means one or more employees of an employer who performs work in a given operation.

(9) "Direct supervision" means that the supervisor:

(a) Is in the immediate area of the operation;

(b) Is within visual sighting distance of the operation;

(c) Is able to effectively communicate with the persons engaged in the operation; and

(d) Has no duties other than to observe and supervise the operation.

(10) "Level I rigger" means an individual who works under the supervision of a competent person and on a routine basis performs rigging work engaged in lifting loads, other than rigging for special lifts, and the erection, dismantling, jumping, or reconfiguring of cranes.

(11) "Level II rigger" means an individual who has accumulated 2 or more years of experience working as a level I rigger and performs rigging work engaged in lifting loads for special lifts, or the erection, dismantling, jumping, or reconfiguring of cranes, or all of these.

(12) "Master/lead rigger" means an individual who has accumulated 5 or more years of experience rigging loads and is authorized by the employer to take prompt corrective action to eliminate hazards.

(13) "NCCA" means the National Commission for Certifying Agencies.

(14) "Qualified person" means a person who, by possession of a recognized degree in an applicable field or certificate of professional standing, or who, by extensive knowledge, training, and experience, has successfully demonstrated the ability to solve problems relating to the subject crane operations.

(15) “Qualified rigging evaluator” means a person employed by the rigger’s employer who has demonstrated that he or she is competent in accurately assessing whether individuals meet the qualification requirements of this chapter for riggers.

(16) "Rigger" means an individual who is engaged in the process of lifting, moving, and rigging loads with hardware and equipment used to attach a load to a crane.

(17) "Rigging" means the hardware, equipment, and means used to safely attach a load to a crane by means of adequately rated and properly applied slings or other devices.

(18) "Safety sensitive position" means a position subject to drug and alcohol testing because the nature of the employee's duties and responsibilities indicate a potential that impaired performance due to drugs or alcohol, or both, could result in injury or death to the employee or others.

(19) "Signal person" means an individual who communicates guidance and direction to a crane operator in lifting, hoisting, moving, or releasing a load.

(20) "Special lift" means a lift using multiple cranes or the erection, dismantling, or jumping of a tower crane.

(21) “Third party qualified rigging evaluator” means an entity that, due to its independence and expertise, has demonstrated that it is competent in accurately assessing whether individuals meet the qualification requirements of this chapter for riggers.

(22) "Tower crane" means a type of lifting structure which utilizes a vertical mast or tower to support a working boom (jib) in an elevated position. Loads are suspended from the working boom. While the working boom may be of a fixed type, horizontal or angled, or have luffing capability, it can always rotate to swing loads, either by rotating on the top of the tower such as top slewing or by the rotation of the tower such as bottom slewing. The tower base may be fixed in one location or ballasted and moveable between locations. Mobile cranes that are configured with luffing jib or tower attachments, or both, are not considered tower cranes under this section.

.04 Incorporation by Reference.

A. In this chapter, the following documents are incorporated by reference.

B. Documents Incorporated.

(1) 29 CFR §1926.1402, except (f);

(2) 29 CFR §1926.1403;

(3) 29 CFR §1926.1404;

(4) 29 CFR §§1926.1405 and 1926.1406;

(5) 29 CFR §1926.1407;

(6) 29 CFR §§1926.1408—1926.1411;

(7) 29 CFR §1926.1412, except delete second sentence of (d)(1)(x) that provides, “This paragraph does not apply to the inspection of ground conditions for railroad tracks and their underlying support when the railroad tracks are part of the general railroad system of transportation that is regulated pursuant to the Federal Railroad Administration under 49 CFR Part 213”;

(8) 29 CFR §1926.1412(e)(3)(ii), except delete “3 months” and substitute “1 year”;

(9) 29 CFR §1926.1412, except in (f)(7) delete “12 months” and substitute “3 years”;

(10) 29 CFR §§1926.1413—1926.1426;

(11) 29 CFR §1926.1427(f)(1), (f)(2), and (f)(3)(i), (iii), and (iv), and (j)(1) and (2);

(12) 29 CFR §§1926.1428—1926.1430, except (c)(2);

(13) 29 CFR §1926.1431;

(14) 29 CFR §1926.1432;

(15) 29 CFR §§1926.1433 and 1926.1434;

(16) 29 CFR §1926.1435;

(17) 29 CFR §1926.1436;

(18) 29 CFR §1926.1437, except in(a) delete "unless specified otherwise" and insert "on non-navigable waters, lakes and streams";

(19) 29 CFR §§1926.1438—1926.1441;

(20) Appendix A to Subpart CC of Part 1926—Standard Hand Signals;

(21) Appendix B to Subpart CC of Part 1926—Assembly/Disassembly—Sample Procedures for Minimizing the Risk of Unintended Dangerous Boom Movement; and

(22) Appendix C to Subpart CC of Part 1926—Operator Certification—Written Examination—Technical Knowledge Criteria;

(23) ASME B30.3-2004 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Construction Tower Cranes;

(24) ASME B30.5-2007 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Mobile and Locomotive Cranes;

(25) ASME B30.6-2003 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Derricks;

(26) ANSI/ASSE A10.42-2000 Safety Requirements for Rigging Qualifications and Responsibilities—American National Standard for Construction and Demolition Operations; and

(27) Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association, National Council on Measurement in Education, 1999).

.05 Drug and Alcohol Free Workplace and Substance Abuse Policy.

A. An employer who employs individuals within a safety sensitive position shall have a drug and alcohol free workplace and substance abuse policy as required by this regulation.

B. The Commissioner designates crane operators, signal persons, riggers, and crane operator trainees as safety sensitive positions.

C. In addition to the positions designated by the Commissioner, an employer may designate other employees who work with or around cranes as being safety sensitive positions.

D. An employer's drug and alcohol free workplace and substance abuse policy shall, at a minimum, require:

(1) Mandatory drug or controlled substance and alcohol testing for all safety sensitive positions under the following circumstances:

(a) At the commencement of employment in a safety sensitive position;

(b) Under reasonable suspicion by the employer;

(c) Randomly; and

(d) Unless the medical condition of the employee does not permit it, immediately or not later than 24 hours following any incident for which crane operations were a direct or indirect cause and which involve:

(i) Property damage greater than $5,000;

(ii) Bodily injury; or

(iii) A fatality;

(2) Testing requirements that are consistent with 49 CFR Part 40, U.S. Department of Transportation, and Health-General Article, §17-214, Annotated Code of Maryland;

(3) A prohibition on employees working in a safety sensitive position while under the influence of alcohol, drugs, or a controlled substance, unless:

(a) An employee is using a controlled substance under the direction of a licensed physician who has advised the employee that the substance will not adversely affect the employee's ability to safely perform the duties assigned;

(b) The employee notifies their supervisor and provides written medical documentation from their physician; and

(c) The employer consents; and

(4) A prohibition on the use, possession, or manufacture of any unlawful drug or use of alcohol while at work.

.06 Crane Operator Requirements.

A. Except as provided in §B of this regulation, an employer shall ensure that prior to operating equipment under this chapter, a person is qualified or certified in accordance with this regulation.

B. The crane operator qualification or certification requirements do not apply to operators of equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 pounds or less.

C. An employer is required to provide the training and qualification or certification at no cost to the employee consistent with §D or E of this regulation.

D. Requirements for Certification Through an Accredited Crane Operator Testing Organization.

(1) An employer can provide certification through an accredited crane operator testing organization.

(2) For a testing organization to be considered accredited to certify crane operators under this regulation, it shall:

(a) Be accredited by a nationally recognized accrediting agency based on that agency's determination that industry recognized criteria for written testing materials, physical examinations, test administration, grading, facilities/equipment, and personnel have been met;

(b) Administer written and practical tests that:

(i) Assess the crane operator applicant regarding, at a minimum, the knowledge and skills listed in 29 CFR §1926.1427(j)(1) and (2);

(ii) Provide different levels of certification based on equipment capacity and type;

(iii) Have procedures for crane operators to reapply and be retested in the event a crane operator applicant fails a test or is decertified; and

(iv) Have testing procedures for recertification designed to ensure that the crane operator continues to meet the technical knowledge and skill requirements in 29 CFR §1926.1427(j)(1) and (2); and

(c) Have its accreditation reviewed by the nationally recognized accrediting agency at least every 3 years.

(3) A crane operator shall be deemed qualified to operate a particular piece of equipment if:

(a) The crane operator is certified under this section for that type and capacity of equipment or for higher-capacity equipment of that type; or

(b) When no accredited testing agency offers certification examinations for a particular type or capacity of equipment, or both:

(i) The operator has been certified for equipment that is most similar;

(ii) A certification examination is available for the most similar equipment; and

(iii) Where applicable, the operator's certificate states the type or capacity of equipment, or both, for which the operator is certified.

(4) A certification issued under this section:

(a) Is portable;

(b) Meets the requirements of §A of this regulation; and

(c) Is valid for 5 years.

E. Audited Employer Program.

(1) An employer can provide qualification through an audited employer program.

(2) Requirements for Qualification.

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

(i) Developed by an accredited crane operator testing organization which is 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; or

(ii) Approved by an auditor who is certified to evaluate such tests by an accredited crane operator testing organization consistent with this regulation.

(b) If approved by an auditor as provided in §E(2)(a)(ii) of this regulation, the auditor's approval process shall be based on the following:

(i) The auditor shall determine whether the written and practical tests meet nationally recognized test development criteria that are valid and reliable in assessing the crane operator applicants regarding, at a minimum, the knowledge and skills listed in 29 CFR §1926.1427(j)(1) and (2) of this regulation; and

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

(c) 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.

(ii) The auditor shall be certified to evaluate the administration of the written and practical tests by an accredited crane operator testing organization consistent with this regulation.

(iii) The auditor may not be an employee of the employer.

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

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

(4) Requalification Testing Procedures.

(a) The employer program shall have testing procedures for requalification designed to ensure that the crane operator continues to meet the technical knowledge and skills requirements in 29 CFR §1926.1427(j)(1) and (2) and this section.

(b) The requalification procedures shall be audited in accordance with nationally recognized auditing standards and this section.

(c) Within 3 months of the beginning of the employer program, the requalification procedures shall be audited.

(d) The audit process shall be conducted at least every 3 years thereafter.

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

(a) No crane operator is qualified until the auditor confirms that the significant deficiency has been corrected;

(b) The program is audited again within 180 days of the confirmation that the significant deficiency was corrected;

(c) The auditor files a documented report of the significant deficiency with the Maryland Occupational Safety and Health program of the Division of Labor and Industry within 15 days of the auditor's determination that there is a deficiency; and

(d) Records of the audits of the employer's program are maintained by the auditor for 3 years and are made available by the auditor to the Commissioner or the Commissioner's designated representative upon request.

(6) A qualification under this paragraph:

(a) Is not portable;

(b) Is valid for the crane operator while the operator is employed by the employer that issued the qualification;

(c) Is valid for 5 years; and

(d) Meets the requirements of §A of this regulation.

F. A testing entity is permitted to provide training as well as testing services if the criteria of an accrediting crane operator testing organization set forth in §D(2) of this regulation are met.

G. Language and Literacy Requirements.

(1) Tests under this section may be administered verbally, with answers given verbally, if the crane operator candidate:

(a) Passes a written demonstration of literacy relevant to the work; and

(b) Demonstrates the ability to use the type of written manufacturer procedures applicable to the class/type of equipment for which the crane operator is seeking certification.

(2) Tests under this section may be administered in any language the crane operator candidate understands, and the crane operator's certificate shall note the language in which the test was given.

(3) The crane operator is qualified under §A of this regulation to operate equipment that is furnished with materials required by this chapter and 29 CFR §1926.1407 et seq. that are written in the language of the certification. The crane operator may only operate equipment furnished with such materials.

H. Certification Criteria. Qualifications and certifications shall be based, at a minimum, on the following:

(1) A determination through a written test that the person has the knowledge necessary for safe operation of the specific type of equipment the individual will operate, including all of the following:

(a) Operational characteristics and controls, limitations and use, rated load capacities, and special hazards, including characteristic and performance questions appropriate to the crane type for which qualification is sought;

(b) Emergency control skills, such as a response to fire, power line contact, loss of stability, or control malfunction;

(c) Demonstrated ability to use arithmetic and load capacity charts to calculate load capacity information on a variety of configurations necessary for safe crane operation;

(d) The ability to read and comprehend the crane manufacturer's operation and maintenance instruction materials, including load capacity charts, for the crane for which qualification or certification is sought;

(e) Depending upon the type of crane the operator intends to operate:

(i) Knowledge of Chapter 3-3 of the ASME B30.3-2004 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Construction Tower Cranes;

(ii) Knowledge of Chapters 5-0—5-3 of the ASME B30.5-2007 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Mobile and Locomotive Cranes; or

(iii) Knowledge of Chapters 6-0—6-3 of the ASME B30.6-2003 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Derricks;

(f) Technical knowledge applicable to:

(i) Operating the specific type of crane;

(ii) Pre-start and post-start inspection, maneuvering skills, shutdowns, and securing procedures;

(iii) Voice and radio communication methods;

(iv) Site hazards and personal fall protection methods;

(v) The suitability of the supporting ground, surface, or structure to handle expected load;

(vi) The hazards and restrictions associated with working adjacent to overhead electric lines and equipment;

(vii) The procedures for preventing and responding to fire, power line contact, loss of stability, or control malfunction; and

(viii) This regulation, including technical knowledge criteria contained in Appendix C to Subpart CC of Part 1926—Operator Certification—Written Examination—Technical Knowledge Criteria; and

(g) The ability to read and locate relevant information in the equipment manual and other materials containing information relative to safe operation; and

(2) A determination through a practical test that the individual has the skills necessary for safe operation of the equipment, including the following:

(a) Ability to recognize, from visual and auditory observation, the items listed in 29 CFR §1926.1412(d);

(b) Operational and maneuvering skills;

(c) Application of load chart information; and

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

I. Every 2 years, an employer shall ensure that a crane operator provides the employer with the following current medical documentation:

(1) Proof of successful completion of a physical examination conducted by a licensed physician that includes, at a minimum, the examination criteria specified in Paragraph 3.1.2 of the ASME B30.5-2007 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Mobile and Locomotive Cranes; or

(2) A certificate of medical examination as required for a commercial driver's license that would be acceptable to the U.S. Department of Transportation, unless the employee provides documentation from a licensed physician that the failure to meet these qualifications will not affect the individual's operation of a crane.

.07 Crane Operator Trainee Requirements.

A. An employee who is not qualified or certified under Regulation .06 of this chapter is permitted to operate a crane as a crane operator trainee only where the requirements of this section are met.

B. An employer shall ensure compliance with the following:

(1) The crane operator trainee is familiar with and understands 29 CFR §1926.1427(f)(1), (f)(2), and (f)(3)(i), (iii), and (iv);

(2) The crane operator trainer is qualified or certified under Regulation .06 of this chapter and is familiar with the proper use of the equipment’s controls; and

(3) The crane operator trainee is directly supervised by the crane operator trainer at all times.

C. The employer shall provide each crane operator trainee with sufficient training prior to operating the equipment to enable the crane operator trainee to operate the equipment safely under limitations established by this section, including direct supervision, and ensure that the crane operator trainee has a basic understanding of:

(1) Crane limitations;

(2) Standard hand signals as defined in ASME B30.5-2007 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Mobile and Locomotive Cranes;

(3) Voice and radio communications;

(4) Crane dynamics involved in swinging, controlling, and stopping loads;

(5) Boom deflection from hoisting loads;

(6) Personal fall protection methods; and

(7) Hazards and restrictions associated with working adjacent to overhead electric lines and equipment.

D. In lieu of compliance with §C of this regulation, an employer may accept proof of completion of training through an operating engineer apprenticeship program that has been approved by the Maryland Apprenticeship and Training Council.

E. The crane operator trainee shall not operate the equipment under any of the following circumstances:

(1) If any part of the equipment, load line or load, including rigging and lifting accessories, is operated up to the equipment’s maximum working radius in the work zone so that the load line or load 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 lifts where 75 percent of the crane’s capacity may be exceeded;

(4) If the equipment is used over a shaft or cofferdam or in a tank farm; and

(5) Special-lift rigging operations, except where the crane operator trainer determines that the crane operator trainee skills are sufficient for this high-skill work.

F. Every 2 years, an employer shall ensure that a crane operator trainee provides the employer with the following current medical documentation:

(1) Proof of successful completion of a physical examination conducted by a licensed physician that includes, at a minimum, the examination criteria specified in Paragraph 3.1.2 of the ASME B30.5-2007 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings—Mobile and Locomotive Cranes; or

(2) A certificate of medical examination as required for a commercial driver's license that would be acceptable to the U.S. Department of Transportation, unless the employee provides documentation from a licensed physician that the failure to meet these qualifications will not affect the individual's operation of a crane.

G. The employer shall require that each crane operator trainee has successfully passed a substance abuse test pursuant to the employer’s drug and alcohol free workplace and substance abuse policy.

.08 Rigger and Rigging Requirements.

A. An employer shall ensure that all rigging has been inspected and is used in accordance with the rigging manufacturer’s limitations and requirements.

B. An employer shall ensure the following:

(1) That each rigger is trained and meets the qualification requirements of §G, H, or I of this regulation depending upon the work to be performed; and

(2) That the rigger is trained to satisfy the qualification requirements of this section at no cost to the employee.

C. Ensuring Compliance.

(1) Except as provided in §C(2) of this regulation, an employer shall ensure compliance with the qualification requirements of this section by using either a third-party qualified rigging evaluator or a qualified rigging evaluator.

(2) An employer may ensure compliance with the qualification requirements for §D of this regulation with written proof of an employee’s successful completion of training through an apprenticeship program for riggers that has been approved by the Maryland Apprenticeship and Training Council.

D. A third-party qualified rigging evaluator or a qualified rigging evaluator shall:

(1) Provide written documentation of his or her determination that the individual has been trained and meets the qualification requirements for the work to be performed; and

(2) Provide in the written documentation the level of qualification of the employee.

E. A determination by a qualified rigging evaluator is not portable.

F. A determination by a third-party qualified rigging evaluator is portable.

G. The qualification requirements for a level I rigger are:

(1) Basic understanding of the equipment operation and limitations, including the dynamics related to equipment movement when swinging and stopping loads and crane boom deflection when hoisting loads;

(2) Basic understanding related to the use and inspection of rigging hardware and equipment applicable to work that is performed, including common load configurations and positioning, and the use of taglines to control loads;

(3) Knowledge and understanding of and competence in the application of the Standard Method for Hand Signals as outlined in ANSI/ASSE A10.42-2000 Safety Requirements for Rigging Qualifications and Responsibilities—American National Standard for Construction and Demolition Operations;

(4) Knowledge and understanding of the emergency procedures to address fire, power line contact, loss of stability, or control malfunction;

(5) Knowledge and understanding of the relevant requirements of 29 CFR §§1926.1419—1926.1422;

(6) Knowledge and understanding of the personal fall protection requirements contained in 29 CFR §1926.1423;

(7) Knowledge and understanding of the hazards and restrictions associated with working adjacent to overhead electric lines, including 29 CFR §§1926.1407—1926.1411, and the Maryland High Voltage Line Act;

(8) Demonstration of the requirements of this subsection through an oral or written test and through a practical test.

H. In addition to the qualification requirements of §G of this regulation, a level II rigger shall:

(1) Have working knowledge of the equipment operation and limitations, including the dynamics related to equipment movement when swinging and stopping loads and crane boom deflection when hoisting loads;

(2) Have working knowledge related to the use and inspection of rigging hardware and equipment applicable to work that is performed, including common load configurations and positioning, and the use of taglines to control loads; and

(3) Have completed training in the safe application, use, and limitations of rigging equipment, as applicable to the work performed, including:

(a) Knowledge and understanding of the implementation methods for blind hoists and lifts;

(b) Knowledge and understanding of a wide range of rigging hitches and knots;

(c) Knowledge and understanding of the effective and safe use of anchor points;

(d) Knowledge and understanding of the effective and safe use of synthetic ropes in rigging applications;

(e) Knowledge and understanding of and the ability to apply the requirements of 29 CFR §§1926.1402—1926.1406 as they relate to ground conditions and crane and equipment assembly and disassembly;

(f) Knowledge and understanding of and the ability to apply the requirements of 29 CFR §§1926.1424—1926.1426 as they relate to hazards that may be created by crane and equipment operations; and

(g) Knowledge and understanding of and the ability to apply and provide direction in the use and limitation of rigging equipment outlined in ANSI/ASSE A10.42-2000 Safety Requirements for Rigging Qualifications and Responsibilities—American National Standard for Construction and Demolition Operations that may be applicable to the work performed.

I. In addition to the qualification requirements of §§G and H of this regulation, a master/lead rigger shall have completed training in safe application, use, and limitations of rigging as applicable to the work performed, including:

(1) The hazards associated with cranes and equipment traveling with a suspended load;

(2) The requirements of 29 CFR §1926.1431 as they relate to hazards that may be created by hoisting and lifting of personnel;

(3) Specific criteria from the manufacturer or equipment representative in the safe and appropriate methods of erection, dismantling, jumping, and reconfiguring of cranes and the relevant requirements of 29 CFR §1926.1435;

(4) Specific criteria for lifting a single load with multiple cranes and the relevant requirements of 29 CFR §1926.1432;

(5) The use and limitations of load indicating devices and the relevant requirements of 29 CFR §1926.1415;

(6) The hazards that may be created by effects of angles or indirect pulling of loads;

(7) The drum/diameter (D/d) ratios; and

(8) Vectors and angles.

J. If the work performance of a level I, level 2, or master/lead rigger indicates that the employee does not meet the qualification requirements of this section, the employer may not allow the employee to continue to work as a rigger until retraining is provided and there is a reassessment that confirms the employee's qualifications.

K. All riggers shall successfully pass a substance abuse test pursuant to the employer's drug and alcohol free workplace and substance abuse policy.

.09 Record Keeping.

A. An employer shall maintain a written record of the training for each crane operator, signal person, rigger, and crane operator trainee.

B. Training Records.

(1) All training records shall be maintained for 3 years after the end of the individual's employment in the employer's principal office of the business in Maryland.

(2) An employer shall make the training records available to the Commissioner of Labor and Industry or the Commissioner's representative for examination and copying upon request.

.10 Special Lifts.

A. An employer shall ensure that each time a special lift occurs all rigging operations are under the direct supervision of a master/lead rigger.

B. An employer shall ensure that, prior to the commencement of work, all rigging used in special lifts is inspected for compliance with all requirements by the master/lead rigger.

C. Forty-eight hours prior to the commencement of any special lift, an employer shall notify the Commissioner of Labor and Industry by e-mail to the address located on the Department's website for special lifts, or fax to 410-767-2986, with the following information:

(1) Name of employer;

(2) General or managing contractor;

(3) Type of special lift;

(4) Site location;

(5) Specific site of special lift within the location;

(6) Site contact person and phone number;

(7) Equipment involved; and

(8) Scheduled time of special lift.

D. If an employer is unable to provide 48 hours notice to the Commissioner of Labor and Industry prior to the commencement of any special lift, the employer shall provide the Commissioner with notice as soon as practical and a written explanation why 48 hours notice was not provided along with the required information in §C(1)—(8) of this regulation, not later than 24 hours after the special lift.

.11 Tower Cranes.

A. An employer shall ensure that prior to the erection or modification of any tower crane or supporting structure, a qualified person shall determine the appropriate and safe method to integrate, assemble, and erect the tower crane for that site.

B. The employer shall ensure that when a tower crane is erected, dismantled, jumped, or reconfigured the following are maintained at the site where the work is performed:

(1) Written instructions by the manufacturer or a qualified person; and

(2) A list of the weights of each subassembly to be erected, dismantled, jumped, or reconfigured.

C. Except when approved and documented by a qualified person, prior to the commencement of work on the tower crane, the employer shall establish procedures for the particular site for the erection, dismantling, jumping, or reconfiguration work.

D. An employer shall ensure that rigging operations during the erection, dismantling, jumping, or reconfiguring of a tower crane is performed under the direct supervision of a master/lead rigger.

E. An employer shall ensure that a daily job safety briefing is conducted before the commencement of work with all persons working on or around the crane in the following circumstances:

(1) Prior to each jumping operation;

(2) Prior to when the boom, jib, or counter-jib is to be reconfigured; or

(3) Prior to when a tower crane is to be dismantled.

F. An employer shall ensure that the master/lead rigger discuss the following at the daily job safety briefing:

(1) The site-specific procedures;

(2) The manufacturer's recommendations and precautions;

(3) Any concerns related to the process that is to be undertaken;

(4) The communication methods and procedures to be used; and

(5) The process workload for the work shift, including the individual tasks to be performed by each person.

G. An employer shall ensure that erection, dismantling, and inspections shall be conducted in accordance with Chapters 3-1 and 3-2 of the ASME B30.3-2004 Safety Standard for Cableways, Cranes, Derricks, Hoists, Hooks, Jacks, and Slings — Construction Tower Cranes.

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