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power line; or any part of the area extending the Table A clearance distance to each side of the power line is within the radius of vertical travel of the boom or the load.

(iv) The load is over a shaft, except where there are no employees in the shaft.

(v) The load is over a cofferdam, except where there are no employees in the fall zone of the boom or the load.

(vi) Lifting operations are taking place in a refinery or tank farm.

(2) The use of equipment in which the boom is designed to free fall (live boom) is permitted only where none of the circumstances listed in paragraph (a)(1) of this section are present and:

(i) The equipment was manufactured prior to October 31, 1984; or

(ii) The equipment is a floating crane/derrick or a land crane/derrick on a vessel/flotation device.

(b) *Preventing boom free fall.* Where the use of equipment with a boom that is designed to free fall (live boom) is prohibited, the boom hoist must have a secondary mechanism or device designed to prevent the boom from falling in the event the primary system used to hold or regulate the boom hoist fails, as follows:

(1) Friction drums must have:

(i) A friction clutch and, in addition, a braking device, to allow for controlled boom lowering.

(ii) A secondary braking or locking device, which is manually or automatically engaged, to back-up the primary brake while the boom is held (such as a secondary friction brake or a ratchet and pawl device).

(2) Hydraulic drums must have an integrally mounted holding device or internal static brake to prevent boom hoist movement in the event of hydraulic failure.

(3) Neither clutches nor hydraulic motors must be considered brake or locking devices for purposes of this subpart.

(4) Hydraulic boom cylinders must have an integrally mounted holding device.

(c) *Preventing uncontrolled retraction.* Hydraulic telescoping booms must have an integrally mounted holding device to prevent the boom from retracting in the event of hydraulic failure.

(d) *Load line free fall.* In each of the following circumstances, controlled load lowering is required and free fall of the load line hoist is prohibited:

(1) An employee is directly under the load.

(2) An employee is being hoisted.

(3) The load is directly over a power line, or over any part of the area extending the Table A of §1926.1408 clearance distance to each side of the power line; or any part of the area extending the Table A of §1926.1408 clearance distance to each side of the power line is within the radius of vertical travel of the load.

(4) The load is over a shaft.

(5) The load is over a cofferdam, except where there are no employees in the fall zone of the load.

§ 1926.1427 Operator qualification and certification.

(a) The employer must ensure that, prior to operating any equipment covered under subpart CC, the person is operating the equipment during a training period in accordance with paragraph (f) of this section, or the operator is qualified or certified to operate the equipment in accordance with the following:

(1) When a non-military government entity issues operator licenses for equipment covered under subpart CC, and that government licensing program meets the requirements of paragraphs (e)(2) and (j) of this section, the equipment operator must either be:

(i) Licensed by that government entity for operation of equipment within that entity's jurisdiction; or

(ii) qualified in compliance with paragraph (d) of this section.

(2) Where paragraph (a)(1) of this section is not applicable, the certification or qualification must comply with one of the options in paragraphs (b) through (d) of this section.

(3) *Exceptions:* Operator qualification or certification under this section is not required for operators of derricks (see §1926.1436), sideboom cranes (see §1926.1440), or equipment with a maximum manufacturer-rated hoisting/lifting capacity of 2,000 pounds or less (see §1926.1441).

(4) Whenever operator qualification or certification is required under

§ 1926.1427, the employer must provide the qualification or certification at no cost to operators who are employed by the employer on November 8, 2010.

(b) *Option (1): Certification by an accredited crane operator testing organization.*

(1) 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 paragraphs (j)(1) and (2) of this section.

(B) 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 recertification designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.

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

(2) An operator will be deemed qualified to operate a particular piece of equipment if the operator is certified under paragraph (b) of this section for that type and capacity of equipment or for higher-capacity equipment of that type. If no accredited testing agency offers certification examinations for a particular type and/or capacity of equipment, an operator will be deemed qualified to operate that equipment if the operator has been certified for the type/capacity that is most similar to that equipment and for which a certification examination is available. The operator's certificate must state the type/capacity of equipment for which the operator is certified.

(3) A certification issued under this option is portable and meets the requirements of paragraph (a)(2) of this section.

(4) A certification issued under this paragraph is valid for 5 years.

(c) *Option (2): Qualification by an audited employer program.* The employer's qualification of its employee must meet the following requirements:

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

(i) Developed by an accredited crane operator testing organization (*see* paragraph (b) of this section); or

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

(A) The auditor is certified to evaluate such tests by an accredited crane operator testing organization (*see* paragraph (b) of this section).

(B) The auditor is not an employee of the employer.

(C) The approval must 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 paragraphs (j)(1) and (2) of this section.

(D) The audit must be conducted in accordance with nationally recognized auditing standards.

(2) *Administration of tests.*

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

(ii) The auditor must be certified to evaluate the administration of the written and practical tests by an accredited crane operator testing organization (*see* paragraph (b) of this section).

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

(iv) The audit must 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) The employer program must have testing procedures for re-qualification designed to ensure that the operator

continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section. The re-qualification procedures must be audited in accordance with paragraphs (c)(1) and (2) of this section.

(5) *Deficiencies.* If the auditor determines that there is a significant deficiency (“deficiency”) in the program, the employer must ensure that:

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

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

(iii) 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.

(iv) 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 the Secretary’s designated representative upon request.

(6) A qualification under this paragraph is:

(i) Not portable. Such a qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.

(ii) Valid for 5 years.

(d) *Option (3): Qualification by the U.S. military.*

(1) For purposes of this section, an operator who is an employee of the U.S. military is considered qualified if he/she has a current operator qualification issued by the U.S. military for operation of the equipment. An employee of the U.S. military is a Federal employee of the Department of Defense or Armed Forces and does not include employees of private contractors.

(2) A qualification under this paragraph is:

(i) Not portable. Such a qualification meets the requirements of paragraph (a) of this section only where the operator is employed by (and operating the equipment for) the employer that issued the qualification.

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

(e) *Option (4): 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 considered a government accredited crane operator testing organization if the criteria in paragraph (e)(2) of this section are met.

(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 paragraphs (j)(1) and (2) of this section.

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

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

(iv) The licensing department/office has testing procedures for re-licensing designed to ensure that the operator continues to meet the technical knowledge and skills requirements in paragraphs (j)(1) and (2) of this section.

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

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

(ii) 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.* An employee who is not qualified or certified under this section is permitted to operate equipment only as an operator-in-training and only where the requirements of this paragraph are met.

(1) The employer must provide each operator-in-training with sufficient training prior to operating the equipment to enable the operator-in-training to operate the equipment safely

under limitations established by this section (including continuous monitoring) and any additional limitations established by the employer.

(2) The tasks performed by the operator-in-training while operating the equipment must be within the operator-in-training's ability.

(3) *Trainer.* While operating the equipment, the operator-in-training must be continuously monitored by an individual ("operator's trainer") who meets all of the following requirements:

(i) The operator's trainer is an employee or agent of the operator-in-training's employer.

(ii) The operator's trainer 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) through (e) of this section, and is familiar with the proper use of the equipment's controls.

(iii) While monitoring the operator-in-training, the operator's trainer performs no tasks that detract from the trainer's ability to monitor the operator-in-training.

(iv) For equipment other than tower cranes: The operator's trainer and the operator-in-training must be in direct line of sight of each other. In addition, they must communicate verbally or by hand signals. For tower cranes: The operator's trainer and the operator-in-training must be in direct communication with each other.

(4) *Continuous monitoring.* The operator-in-training must be monitored by the operator's trainer at all times, except for short breaks where all of the following are met:

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

(ii) Immediately prior to the break the operator's trainer informs the operator-in-training of the specific tasks that the operator-in-training is to perform and limitations to which he/she must adhere during the operator trainer's break.

(iii) The specific tasks that the operator-in-training will perform during the operator trainer's break are within the operator-in-training's abilities.

(5) The operator-in-training must not operate the equipment in any of the

following circumstances unless the exception stated in paragraph (f)(5)(v) of this section is applicable:

(i) If any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone (see §1926.1408(a)(1)), 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.

(ii) If the equipment is used to hoist personnel.

(iii) In multiple-equipment lifts.

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

(v) In multiple-lift rigging operations, except where the operator's trainer determines that the operator-in-training 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) *Language and Literacy Requirements.*

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

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

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

(2) Tests under this section may be administered in any language the operator candidate understands, and the operator's certificate must note the language in which the test was given. The operator is qualified under paragraph (b)(2) of this section to operate equipment that is furnished with materials required by this subpart that are written in the language of the certification. The operator may only operate equipment furnished with such materials.

(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 all of the following:

(A) The controls and operational/performance characteristics.

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

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

(D) Technical knowledge similar to the subject matter criteria listed in appendix C of this subpart applicable to the specific type of equipment the individual will operate. Use of the appendix C criteria meets the requirements of this provision.

(E) Technical knowledge applicable to:

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

(2) Site hazards.

(3) Site access.

(F) This subpart, including applicable incorporated materials.

(ii) The individual is able to read and locate relevant information in the equipment manual and other materials containing information referred to in paragraph (j)(1)(i) of this section.

(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 auditory observation, the items listed in §1926.1412(d) (shift inspection).

(ii) Operational and maneuvering skills.

(iii) Application of load chart information.

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

(k) *Phase-in.*

(1) The provisions of this section are applicable November 8, 2010, except for paragraphs (a)(2) and (f) which are applicable November 10, 2014.

(2) When §1926.1427(a)(1) is not applicable, all of the requirements in paragraphs (k)(2)(i) and (ii) of this section apply until November 10, 2014:

(i) The employer must ensure that operators of equipment covered by this standard are 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 employer must train that employee prior to operating the equipment. The employer must ensure that each operator is evaluated to confirm that he/she understands the information provided in the training.

§1926.1428 Signal person qualifications.

(a) The employer of the signal person must ensure that each signal person meets the Qualification Requirements (paragraph (c) of this section) prior to giving any signals. This requirement must be met by using either Option (1) or Option (2) of this section.

(1) *Option (1)—Third party qualified evaluator.* The signal person has documentation from a third party qualified evaluator (*see* Qualified Evaluator (third party), §1926.1401 for definition) showing that the signal person meets the Qualification Requirements (*see* paragraph (c) of this section).

(2) *Option (2)—Employer's qualified evaluator.* The employer's qualified (*see* Qualified Evaluator (not a third party), §1926.1401 for definition) evaluator assesses the individual and determines that the individual meets the Qualification Requirements (*see* paragraph (c) of this section) and provides documentation of that determination. An assessment by an employer's qualified evaluator under this option is not portable—other employers are not permitted to use it to meet the requirements of this section.

(3) The employer must make the documentation for whichever option is used available at the site while the signal person is employed by the employer. The documentation must specify each type of signaling (*e.g.* hand signals, radio signals, *etc.*) for which the signal person meets the requirements of paragraph (c) of this section.

(b) If subsequent actions by the signal person indicate that the individual does not meet the Qualification Requirements (*see* paragraph (c) of this