

NC DOT proposes using the training format from 1910.178 Industrial Truck for crane operator training, and suggest the definition: Qualified Crane Operator- an employee who has been trained and certified by the employer according to 1926.XXX. Crane Operator Training.

This avoids the various interpretation of "Qualified" and sets definitive parameters for the level of knowledge and experience for the crane operators. It restricts the operator to only the type and size of crane that training and certification by the employer that has occurred. It will allow an employer to have a trainee level during which a crane operator learns and experiences crane operation under the supervision of a qualified crane operator.

NC DOT Proposed Crane Operator Training

1926.XXX(a)

The employer shall ensure that each crane operator is competent to operate a crane safely, as demonstrated by the successful completion of the training and evaluation specified in this paragraph (a).

1926.XXX(a)(1)

Prior to permitting an employee to operate a crane operator(except for training purposes), the employer shall ensure that each operator has successfully completed the training required by this paragraph (a), except as permitted by paragraph (a)(5).

1926.XXX(a)(2)

Training program implementation.

1926.XXX(a)(2)(i)

Trainees may operate a crane only:

1926.XXX(a)(2)(i)(A)

Under the direct supervision of persons who have the knowledge, training, and experience to train operators and evaluate their competence; and

1926.XXX(a)(2)(i)(B)

Where such operation does not endanger the trainee or other employees.

1926.XXX(a)(2)(ii)

Training shall consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video tape, written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the operator's performance in the workplace.

1926.XXX(a)(2)(iii)

All operator training and evaluation shall be conducted by persons who have the knowledge, training, and experience to train crane operators and evaluate their competence.

1926.XXX(a)(3)

Training program content. Crane operators shall receive initial training in the following topics, except in topics which the employer can demonstrate are not applicable to safe operation of the crane in the employer's workplace.

1926.XXX(a)(3)(i)

Crane-related topics:

1926.XXX(a)(3)(i)(A)

Operating instructions, warnings, and precautions for the types of crane the operator will be authorized to operate;

1926.XXX(a)(3)(i)(B)

Crane controls and instrumentation: where they are located, what they do, and how they work;

1926.XXX(a)(3)(i)(C)

Engine or power transmission operation;

1926.XXX(a)(3)(i)(D)

Steering and maneuvering;

1926.XXX(a)(3)(i)(E)

Crane set-up including the design and use of outrigger pads and runway mats;

1926.XXX(a)(3)(i)(F)

Crane attachments, operation, and use limitations;

1926.XXX(a)(3)(i)(G)

Crane capacity, load chart, center of gravity, calculation of load weight and lift planning;

1926.XXX(a)(3)(i)(H)

Crane stability and crane structural integrity;

1926.XXX(a)(3)(i)(I)

Crane inspections and maintenance that the operator will be required to perform;

1926.XXX(a)(3)(i)(J)

Crane movement signals;

1926.XXX(a)(3)(i)(K)

Any other operating instructions, warnings, or precautions listed in the operator's manual for the types of crane that the employee is being trained to operate.

1926.XXX(a)(3)(ii)

Workplace-related topics:

1926.XXX(a)(3)(ii)(A)

Powerline hazards and minimum approach distances;

1926.XXX(a)(3)(ii)(B)

Composition of loads to be lifted and load stability;

1926.XXX(a)(3)(ii)(C)

Load manipulation, lifting, and movement;

1926.XXX(a)(3)(ii)(D)

Surface conditions and how related to stability where the crane will be operated;

1926.XXX(a)(3)(ii)(E)

Ramps and other sloped surfaces that could affect the vehicle's stability;

1926.XXX(a)(3)(ii)(F)

Pedestrian traffic in areas where the crane will be operated;

1926.XXX(a)(3)(ii)(G)

Other unique or potentially hazardous environmental conditions in the workplace that could affect safe operation.

1926.XXX(a)(4)

Refresher training and evaluation.

1926.XXX(a)(4)(i)

Refresher training, including an evaluation of the effectiveness of that training, shall be conducted as required by paragraph (a)(4)(ii) to ensure that the operator has the knowledge and skills needed to operate the crane safely.

1926.XXX(a)(4)(ii)

Refresher training in relevant topics shall be provided to the operator when:

1926.XXX(a)(4)(ii)(A)

The operator has been observed to operate the crane in an unsafe manner;

1926.XXX(a)(4)(ii)(B)

The operator has been involved in an accident or near-miss incident;

1926.XXX(a)(4)(ii)(C)

The operator has received an evaluation that reveals that the operator is not operating the crane safely;

1926.XXX(a)(4)(ii)(D)

The operator is assigned to operate a different type of crane; or

1926.XXX(a)(4)(ii)(E)

A condition in the workplace changes in a manner that could affect safe operation of the crane.

1926.XXX(a)(4)(iii)

An evaluation of each crane operator's performance shall be conducted at least once every three years.

1926.XXX(a)(5)

Avoidance of duplicative training. If an operator has previously received training in a topic specified in paragraph (a)(3) of this section, and such training is appropriate to the crane and working conditions encountered, additional training in that topic is not required if the operator has been evaluated and found competent to operate the crane safely.

1926.XXX(a)(6)

Certification. The employer shall certify that each operator has been trained and evaluated as required by this paragraph (a). The certification shall include the name of

the operator, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.

1926.XXX(b)

Qualified crane inspector. The employer shall ensure that each crane inspector is competent to inspect a crane safely, as demonstrated by the successful completion of the training and evaluation specified in this paragraph (b).

1926.XXX(b)

Training program implementation.

1926.XXX(b)

Training shall consist of a combination of formal instruction (e.g., lecture, discussion, interactive computer learning, video tape, written material), practical training (demonstrations performed by the trainer and practical exercises performed by the trainee), and evaluation of the inspector's performance in the workplace.

1926.XXX(b)

All inspector training and evaluation shall be conducted by persons who have the knowledge, training, and experience to train crane inspectors and evaluate their competence.

1926.XXX(b)

Certification. The employer shall certify that each inspector has been trained and evaluated as required by this paragraph (b). The certification shall include the name of the inspector, the date of the training, the date of the evaluation, and the identity of the person(s) performing the training or evaluation.

1926.XXX(h) Boom attached personnel platforms

1926.XXX(h)(1)

Operational criteria.

1926.XXX(h)(1)(i)(A)

Hoisting of the personnel platform shall be performed in a slow, controlled, cautious manner with no sudden movements of the crane or derrick, or the platform.

1926.XXX(h)(1)(i)(B)

The crane shall be uniformly level within one percent of level grade and located on firm footing. Cranes equipped with outriggers shall have them all fully deployed following manufacturer's specifications, insofar as applicable, when hoisting employees.

1926.XXX(h)(1)(i)(C)

The total weight of the loaded personnel platform and necessary tools shall not exceed the rated capacity of the platform nor 50% of the crane load capacity rating.

1926.XXX(h)(1)(ii)

Instruments and components.

1926.XXX(h)(1)(ii)(A)

Booms shall be equipped with a boom angle indicator, readily visible to the operator.

1926.XXX(h)(1)(ii)(B)

Telescoping booms shall be equipped with a device to indicate clearly to the operator, at all times, the boom's extended length or an accurate determination of the load radius to be used during the lift shall be made prior to hoisting personnel.

1926.XXX(h)(3)(ii)(C)

A positive acting device shall be used which prevents contact between the load block or overhaul ball and the boom tip (anti-two-blocking device), or a system shall be used which deactivates the hoisting action before damage occurs in the event of a two-blocking situation (two-block damage prevention feature).

1926.XXX(h)(4)

Personnel Platforms. -

1926.XXX(h)(4)(i)

Design criteria.

1926.XXX(h)(4)(i)(A)

The personnel platform attached to a boom shall be designed by the original crane manufacturer.

1926.XXX(h)(4)(i)(B)

The personnel platform shall be designed to minimize tipping of the platform due to movement of employees occupying the platform.

1926.XXX(h)(4)(i)(C)

The personnel platform and the attachment points shall be capable of supporting, without failure, its own weight and at least five times the maximum intended load. Criteria for guardrail systems and personal fall arrest system anchorage are contained in subpart M of this Part.

1926.XXX(h)(4)(ii)

Platform specifications.

1926.XXX(h)(4)(ii)(A)

Each personnel platform shall be equipped with a guardrail system and toeboards which meets the requirements of Subpart M. and shall be enclosed at least from the toeboards to mid-rail with either solid construction or expanded metal having openings no greater than 1/2 inch (1.27 cm).

1926.XXX(h)(4)(ii)(C)

Access gates shall not swing outward.

1926.XXX(h)(4)(ii)(D)

Access gates, including sliding or folding gates, shall be equipped with a double locking device to prevent accidental opening.

1926.XXX(h)(4)(ii)(F)

In addition to the use of hard hats, employees shall be protected by overhead protection on the personnel platform when employees are exposed to falling objects.

1926.XXX(h)(4)(ii)(h)

All rough edges exposed to contact by employees shall be surfaced or smoothed in order to prevent injury to employees from punctures or lacerations.

1926.XXX(h)(4)(ii)(I)

The personnel platform shall be conspicuously posted with a plate or other permanent marking which indicates the weight of the platform, and its rated load capacity or maximum intended load.

1926.XXX(h)(4)(iii)

Personnel platform loading.

1926.XXX(h)(4)(iii)(A)

The personnel platform shall not be loaded in excess of its rated load capacity.

1926.XXX(h)(4)(iii)(B)

The number of employees occupying the personnel platform shall not exceed the number required for the work being performed.

1926.XXX(h)(4)(iii)(C)

Personnel platforms shall be used only for employees, their tools and the materials necessary to do their work, and shall not be used to hoist only materials or tools when not hoisting personnel.

1926.XXX(h)(4)(iii)(D)

Materials and tools for use during a personnel lift shall be secured to prevent displacement.

1926.XXX(h)(4)(iii)(E)

Materials and tools for use during a personnel lift shall be evenly distributed within the confines of the platform while the platform is suspended.

1926.XXX(h)(5)

Trial lift and inspections.

1926.XXX(h)(5)(i)

A trial lift with the unoccupied personnel platform shall be made immediately prior to placing personnel on the platform. The trial lift shall be conducted to extend the platform to all of the positions to be reached. The crane operator shall determine that all systems, controls and safety devices are activated and functioning properly; that no interference exist. Materials and tools to be used during the actual lift can be loaded in the platform, as provided in paragraphs (h)(4)(iii)(D), and (E) of this section for the trial lift. A single trial lift shall be performed for a single set up position.

1926.XXX(h)(5)(iii)

Employees shall not be hoisted unless the following conditions are met:

1926.XXX(h)(5)(iii)(a)

A visual inspection of the crane, personnel platform, and the crane base support or ground shall be conducted by a competent person immediately after the trial lift to determine whether the testing has exposed any defect or produced any adverse effect upon any component or structure.

1926.XXX(h)(5)(iii)(b)

Any defects found during inspections which create a safety hazard shall be corrected before hoisting personnel.

1926.XXX(h)(6)

Work practices.

1926.XXX(h)(6)(i)

Employees shall keep all parts of the body inside the platform during raising lowering, and positioning. This provision does not apply to an occupant of the platform performing the duties of a signal person.

1926.XXX(h)(6)(ii)

The platform shall not be secured to the structure where the work is to be performed, unless securing to the structure creates a safer situation.

1926.XXX(h)(6)(iv)

The crane operator shall remain at the controls at all times when the platform is occupied.

1926.XXX(h)(6)(v)

Hoisting of employees shall be promptly discontinued upon indication of any dangerous weather conditions or other impending danger.

1926.XXX(h)(6)(vi)

Employees being hoisted shall remain in continuous sight of and in direct communication with the operator or signal person. Direct communication such as by radio is preferred.

1926.XXX(h)(7)

Hoisting of employees while the crane is traveling is prohibited

1926.XXX(h)(8)

Pre-lift meeting.

1926.XXX(h)(8)(i)

A meeting attended by the crane operator, signal person, (if necessary for the lift), employees to be lifted, and the competent person shall be held to review the appropriate requirements of this section and the procedures to be followed.

1926.XXX(h)(8)(ii)

This meeting shall be held prior to the trial lift at each new work location, and shall be repeated for any employees newly assigned to the operation.