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## COMMISSIONER'S ORDER

**FROM:** Rick D. Chandler, P.E.

**DATE:** June 30, 2016

**RE:** CRAWLER CRANE SAFETY REQUIREMENTS

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Pursuant to the authority in the NYC Charter and the NYC Construction Codes, the New York City Department of Buildings Commissioner's Order of March 15, 2016 regarding crawler crane safety requirements is hereby rescinded.

Effective immediately, and until further notice, I hereby order the following for all crawler cranes, except for: (i) crawler cranes equipped as a pile driver or clamshell; and except for (ii) crawler cranes with a telescopic boom, provided no lattice jib or other lattice element is attached to the boom, and provided the boom is fully retracted at the cessation of crawler crane operations:

### Compliance with Code and Manufacturer Specifications

- I. In accordance with NYC Building Code Section 3301.1.3, all equipment shall be used in accordance with the specifications of the manufacturer, the requirements of the Building Code, and Department rules and regulations. Where there is a discrepancy, the stricter requirement shall apply.
- II. When unexpected or exigent circumstances warrant, the equipment user must consult with the engineer of record, and may also consult with the crane manufacturer.

### **Anemometer Required**

- III. No crawler crane covered by this order shall operate unless such crane is equipped with an anemometer, provided by the crane manufacturer or an entity acceptable to the crane manufacturer, and located at the top of the boom or other location specified by the crane manufacturer.
- IV. The anemometer must measure a 3-second wind gust.
- V. A real time display of the anemometer must be available to the hoisting machine operator in the crane cab or operator's station.

### **In-service (in-operation) Wind Threshold**

- VI. Picks shall not start when
  - a. The anemometer (see Section III) measures a wind speed in excess of the threshold specified by the wind action plan (see Section X) or 30 mph, whichever is more stringent; or
  - b. As otherwise warranted by weather conditions or weather forecasts.
- VII. During the course of work
  - a. It is the responsibility of the hoisting machine operator to safely bring the pick to a stop and safely land the load when the anemometer (see Section III) measures a wind speed in excess of the threshold specified by the wind action plan (see Section X) or 30 mph, whichever is more stringent; and
  - b. It is the responsibility of the lift director (see Section XVII) to monitor weather conditions and forecasts periodically throughout the shift and coordinate with the hoisting machine operator to cease operations when warranted by weather conditions or forecasts and an evaluation of current crane operations, anticipated pick times, and the lead time required to stop the pick and park or secure the crane in accordance with the wind action plan (see Section X).

### Parking and Securing the Crane

- VIII. At the end of the shift, or as weather conditions warrant, the hoisting machine operator shall properly park or secure the crane in accordance with the wind action plan (see Section X) for occurring or forecasted winds.
- IX. After the crane is parked or secured in accordance with Section VIII, the hoisting machine operator shall create a written record. The record shall be maintained by the equipment user at the job site as part of the daily crane inspection checklist and made available to the Commissioner upon request. Such written record must:
- a. Describe the out of service configuration in which the crane was left (e.g. boomed up with boom and jib angles specified, boom or boom/jib combination laid down, boom or boom/jib combination jackknifed, or other special protective measures implemented);
  - b. Reference the wind action plan (see Section X) drawing that specifies the indicated out of service configuration;
  - c. Note the maximum wind speed allowed for such configuration as indicated in the wind action plan (see Section X);
  - d. Note the date and time of the entry; and
  - e. Contain the name and signature of the hoisting machine operator.

### Wind Action Plan

- X. Information on the certificate of on-site inspection (CN) plan related to wind thresholds, configurations, and procedures shall be known as the **wind action plan**. For all new and amended CN plans for a crawler crane covered by this order, the wind action plan must clearly indicate, for each configuration authorized by the plans, the following information:
- a. Load reductions, if any, due to wind;
  - b. The maximum in-service (in-operation) wind threshold; and
  - c. Wind thresholds, configurations, and procedures, including angles and sequencing, for parking and securing the crane in each applicable out-of-

service position (e.g. retracted, parked, jackknifed, laid down, and/or other special protective measures for wind).

- XI. The maximum in-service (in-operation) wind threshold listed in the wind action plan cannot exceed 30mph (sustained or gust).
- XII. The wind action plan must include all applicable thresholds and procedures for the configuration or configurations authorized in the CN plans. Where multiple configurations are included, the plan must clearly identify the applicable thresholds and procedures for each configuration.
- XIII. For all new and amended CN plans for a crawler crane covered by this order, the wind action plan must be a complete, self-contained document, and account for site conditions. Where the manufacturer's specifications can be fully implemented at the site, the plan must incorporate this information. Where site conditions prevent full implementation of the manufacturer's specifications (e.g. site conditions make it impossible to point the boom into the wind), the engineer must contact the manufacturer and develop alternate procedures and/or thresholds, as appropriate, and incorporate them into the wind action plan.
- XIV. The wind action plan shall describe the communication protocol that will ensure safeguarding the crane in the event of changes of forecasts over weekends or longer stoppage periods.
- XV. The wind action plan must be kept in the hoisting machine operator's cab at all times and be easily accessible to the hoisting machine operator.
- XVI. A copy of the wind action plan must separately be kept at the jobsite at all times and be easily accessible to the lift director (see Section XVII).

### **Lift Director Required**

- XVII. No crawler crane covered by this order shall be used unless a lift director who meets the qualifications of Section XVIII, and performs the duties prescribed by Sections XXI through XXVII is present at the jobsite at all times when:

- a. The crane is picking a load;
- b. The crane is in the process of being relocated to a new location at the jobsite, including but not limited to being moved onto or off of cribbing or up or down a ramp;
- c. The crane is being placed into a parked condition or otherwise being taken out of service;
- d. The crane's boom/jib is being laid down or jackknifed;
- e. The crane's boom/jib is being raised from a laid down or jackknifed position;  
or
- f. Other special protective measures for wind are being installed or removed.

### **Designation of the Lift Director**

- XVIII. It is the responsibility of the equipment user to:
- a. Appoint a qualified and competent person as the lift director; and
  - b. Ensure that the lift director is present at the jobsite when required by Section XVII and performs the duties prescribed by Sections XXI through XXVII.
- XIX. Where the equipment user is a licensed rigger, the licensed rigger or designated rigging foreman must be appointed as the lift director. In all other cases the rigging supervisor may be appointed as the lift director, or a separate individual may be appointed as the lift director. The hoisting machine operator may not serve as the lift director; however, a licensed hoisting machine operator who is not otherwise operating equipment at the jobsite may serve as a lift director.
- XX. A letter designating the lift director, signed and dated by the equipment user, must be kept at the jobsite and available for inspection by the Commissioner upon request.

### **Duties of the Lift Director**

- XXI. The lift director shall perform the following duties:

- a. Verify the crane is located and configured in accordance with the CN plans prior to the start of each shift and whenever the crane is relocated or reconfigured;
- b. Verify site conditions match the CN plans prior to the start of each shift and whenever the crane is relocated or reconfigured;
- c. Verify traffic and pedestrian controls are in place, prior to the start of and throughout:
  - i. The work shift;
  - ii. Any crane relocation;
  - iii. Any laying down or jackknifing of the crane's boom/jib;
  - iv. Any raising of the crane's boom/jib from a laid down or jackknifed position; or
  - v. Any other special protective measures for wind are being installed or removed.
- d. Verify that the hoisting machine operator, rigging supervisor, rigging crew, and signalpersons possess the proper license, foreman card, certification card, or training card, as appropriate, prior to the start of each shift, or if personnel change during the course of the shift, prior to such person beginning work;
- e. Hold the pre-shift meeting in accordance with Section XXV;
- f. Verify the continued presence of a hoisting machine operator and rigging supervisor throughout the shift;
- g. Check weather conditions and forecasts prior to the start of each shift, and monitor them periodically throughout the shift;
- h. Coordinate with the hoisting machine operator to cease operations when warranted by weather conditions or forecasts and an evaluation of current crane operations, anticipated pick times, and the lead time required to stop picks and park or secure the crane in accordance with the wind action plan (see Section X);

- i. At the end of the shift, or as weather conditions warrant, verify that the hoisting machine operator has ceased operations;
- j. Verify that the hoisting machine operator has completed the written record required by Section IX prior to the hoisting machine operator leaving the site;
- k. When carrying loads over an occupied building, verify that the top two floors are vacated or proper roof protection is in place prior to the start of such operation in accordance with 1 RCNY 3319-01(q)(3)(v);
- l. Prior to a critical pick, as defined in Section 3302.1 of the New York City Building Code, verify that a master rigger or registered design professional has checked for compliance with the critical pick plan in accordance with Section 3316.9.1 of the New York City Building Code;
- m. Prior to operating near power lines, verify compliance with 1 RCNY 3319-01(s)(3); and
- n. Prior to hoisting personnel with a crane, verify compliance with 1 RCNY 3319-01(q)(6).

### **Ordering Corrective Action and Notification to DOB**

XXII. In the event the lift director discovers a violation of one or more of the items identified in Section XXI, the lift director shall immediately notify the appropriate personnel to correct the condition, and if necessary, order the crane and rigging operations to stop. If the violation is not promptly corrected, the lift director shall notify the Department of the violation. Upon the condition being corrected, or where it is not corrected, upon the lift director notifying the Department of the violation, any responsibility the lift director has, as it pertains to their role as the lift director, arising out of, or as a result of the existence of that condition, shall cease.

### **Authority to Stop Operations**

XXIII. The lift director has the authority to stop crane and rigging operations. When the lift director orders operations to stop, the hoisting machine operator and rigging supervisor must take appropriate action to safely implement the directive. The hoisting machine operator and rigging supervisor each separately possess

authority to stop crane and rigging operations; the lift director may not overrule the hoisting machine operator or rigging supervisor when the hoisting machine operator or rigging supervisor orders operations to stop.

### **Responsibility for Crane and Rigging Operations**

XXIV. Safe operation of the crane remains the responsibility of the hoisting machine operator. Safe rigging operations remain the responsibility of the rigging supervisor. The presence of the lift director does not relieve, alter, or diminish any responsibility or obligation of any other party, including but limited to the hoisting machine operator or rigging supervisor.

### **Pre-shift Meeting Required**

- XXV. Prior to the start of every shift involving a crawler crane covered by this order, the lift director, hoisting machine operator, rigging supervisor, and members of the rigging crew, including but limited to signalpersons, shall meet and review:
- a. The day's planned operations;
  - b. Roles of personnel;
  - c. Objects to be lifted/lowered, including a review of their weights, lifting points, and any special considerations;
  - d. Rigging and equipment to be used, including an inspection of such;
  - e. If using synthetic slings, softening mechanisms, including an inspection of such;
  - f. Site conditions;
  - g. Pick and landing zones;
  - h. Fall, crush, electrical, and other hazards;
  - i. Pedestrian and traffic controls;
  - j. Permit validity;
  - k. Current weather conditions and forecasts;



- I. Wind speed thresholds for the crane; and
  - m. Procedures and sequence to park and secure the crane in accordance with the wind action plan (see Section X) should wind speed thresholds be exceeded.
- XXVI. The meeting shall be led by the lift director.
- XXVII. A sign in sheet, signed and dated by all of the attendees at the meeting, shall be prepared by the lift director and kept at the jobsite, available for inspection by the Commissioner upon request.

**Familiarization for Cranes that Require a Class B Hoisting Machine Operator**

- XXVIII. Prior to operating a crawler crane that meets all three of the following: (i) is covered by this order; (ii) requires a Class B hoisting machine operator; and (iii) whose initial CN is issued on or after August 1, 2016, the hoisting machine operator for such crane must, for the specific make, model, and configuration of crane to be operated at the jobsite, familiarize themselves as to:
- a. The crane’s controls, computer displays, operator aids, and safety devices; and
  - b. The wind action plan for the crane (see Section X).
- XXIX. Where the configuration of the crane changes at the jobsite, it is the responsibility of the hoisting machine operator to determine, prior to operating the crane in the new configuration, if the change of configuration impacts any of the items listed in Section XXVIII above, and if so, to familiarize themselves as to the items that have changed.
- XXX. The equipment user shall confirm that the licensed hoist machine operator has complied with the familiarization requirements of Section XXVIII and XXIX.

**Notification to the Department Prior to Certain Crawler Crane Actions:**

- XXXI. The equipment user must notify the Department immediately prior to any of the following actions if such action occurs in, over, or requires the closure of streets, sidewalks, or other public ways:

- a. Setting up a crawler crane;
- b. Taking down a crawler crane;
- c. Laying down a crawler crane boom or boom/jib combination;
- d. Jackknifing a crawler crane boom or boom/jib combination;
- e. Implementation of other special protective measures to secure a crawler crane; or
- f. Raising a crawler crane boom or boom/jib combination from a laid down or jackknifed position, or removing other special protective measures.

XXXII. The notification described in Section XXXI above must be e-mailed to [candnotifications@buildings.nyc.gov](mailto:candnotifications@buildings.nyc.gov). The subject of the e-mail must be titled **Crawler Crane Action: Job address, CN Number** (where applicable).

XXXIII. The equipment user, in the body of the e-mail, must:

- a. Describe the nature of the action, per Section XXXI above; and
- b. Provide an estimated schedule of when such action will begin and be completed. Where such schedule changes, the equipment user must send an additional email to the Department, responding to the original notification to the Department required by Section XXXII above, and provide an updated schedule.

XXXIV. Following the completion of any action described in Section XXXI above, the equipment user must send an additional email to the Department, responding to the original notification to the Department required by Section XXXII above, stating that the action has been completed.

### **Prohibition on Crawler Cranes Configurations that Require Certain Actions to be Taken at 20mph or Less**

XXXV. Crawler cranes covered by this order may not be placed into a configuration where the wind action plan (see Section X) requires, at a wind speed of 20 mph or less (sustained or gust): i) the boom or boom/jib combination to be laid down; ii) the boom or boom/jib combination to be placed in a jackknife position; or iii) other special protective measures to be implemented, unless:

- a. At the end of the shift or as weather conditions warrant, the crane boom/jib combination is laid down or jackknifed, or other special protective measures are implemented; and
- b. The crane is set up and operated within a safety zone, where:
  - i. The distance from the crane to the boundary of the safety zone is equal to or greater than the length of the boom, jib, and any other attachments;
  - ii. All areas within the safety zone are vacated and closed to the public;
  - iii. The safety zone is managed in such a manner that personnel can be evacuated from the safety zone in case of emergencies; and
  - iv. The lift director (see Section XVII) is responsible for ordering the evacuation of the safety zone when necessary.

**Special Provisions for Crawler Crane Configurations that Require Certain Actions to be Taken Above 20mph but at or Under 30mph**

- XXXVI. Crawler cranes covered by this order may not be placed into a configuration where the wind action plan (see Section X) requires, at a wind speed of above 20 mph but at or under 30mph (sustained or gust): i) the boom or boom/jib combination to be laid down; ii) the boom or boom/jib combination to be placed in a jackknife position; or iii) other special protective measures to be implemented, unless:
- a. At the end of the shift or as weather conditions warrant, the crane boom/jib combination is laid down or jackknifed, or other special protective measures are implemented; and one of the following:
  - b. Where the certificate of on-site inspection (CN) is issued on or after August 1, 2016 a plan for monitoring and securing the crane is submitted to and approved by the Department; or
  - c. Where the certificate of on-site inspection (CN) is issued on or after August 1, 2016 the crane is set up and operated within a safety zone, where:
    - i. The distance from the crane to the boundary of the safety zone is equal to or greater than the length of the boom, jib, and any other attachments;
    - ii. All areas within the safety zone are vacated and closed to the public;

- iii. The safety zone is managed in such a manner that personnel can be evacuated from the safety zone in case of emergencies; and
- iv. The lift director (see Section XVII) is responsible for ordering the evacuation of the safety zone when necessary.

  
Rick D. Chandler, P.E., Commissioner