



Rick D. Chandler, P.E.
Commissioner

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nyc.gov/buildings

COMMISSIONER'S ORDER

FROM: Rick D. Chandler, P.E.

DATE: March 15, 2016

RE: CRAWLER CRANE SAFETY REQUIREMENTS

Pursuant to the authority in the NYC Charter and the NYC Construction Codes, effective immediately, and until further notice, I hereby order the following:

Compliance with code and manufacturer recommendations:

- 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. The equipment user must secure their crawler crane against wind in accordance with city regulations, the crawler crane on-site application (CN) plans (where applicable), and the specifications of the crane manufacturer. When unexpected or exigent circumstances warrant, the equipment user must consult with the crane manufacturer.

Responsibility to monitor weather conditions:

- III. It is the responsibility of the equipment user to monitor forecasts and wind speed measurements. The equipment user must cease operation and properly secure the crawler crane against wind when wind speed thresholds are exceeded, even in the absence of notification by the Department.

Wind protocol for crawler cranes:

- IV. When the most recent hourly forecast of the National Weather Service shows that winds (sustained or gust) will:

i) exceed 30mph; ii) exceed a lower wind threshold specified in the DOB-approved site drawings for the crane configuration; or iii) exceed a lower wind threshold specified by the manufacturer for the crane configuration, it is the responsibility of the crawler crane equipment user to cease operation of the crane and properly secure the crane against wind before the predicted winds are expected to reach the threshold. If this cannot be accomplished before the predicted winds are expected to reach the threshold, the crane must be properly secured against wind and shall not begin hoisting operations.

V. In the absence of a forecast specifying winds in excess of Section IV above, it is the responsibility of the crawler crane equipment user to immediately cease operation of the crane and properly secure the crane against wind whenever winds (sustained or gust): i) exceed 30mph; ii) exceed a lower wind threshold specified in the DOB-approved site drawings for the crane configuration; or iii) exceed a lower wind threshold specified by the manufacturer for the crane configuration. If winds already exceed such threshold at the beginning of the shift, the crane must be properly secured against wind and may not begin hoisting operations until the wind speed drops below such threshold. The relevant wind speed shall be determined by the highest wind speed (sustained or gust) from the following sources:

- a. The most recent hourly reported measurement of the nearest National Weather Service reporting station; and
- b. The current measurement from:
 - i. An anemometer that is 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; or
 - ii. Where the crane does not have an anemometer, or such anemometer is not functioning properly, an anemometer located at a high point of the jobsite, freely exposed to the wind, and calibrated in accordance with ASTM D5096-02, 2011.

Special provisions for crawler cranes configurations that require certain actions to be taken at 30mph or less:

VI. Where, in accordance with the DOB-approved site drawings for the crane configuration or manufacturer specifications for the crane configuration, the crawler crane is configured such that it would require the following to be implemented at a wind speed (sustained or gust) of 30 mph or less: 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, it is the responsibility of the equipment user to:

- a. Ensure that a New York State licensed professional engineer is present at the site at all times the crane is being utilized (including but not limited to regular operations, setting up a crawler crane, taking down a crawler crane, moving a crawler crane onto or off of cribbing, moving a crawler crane up or down a ramp, laying down a crawler crane boom or boom/jib combination, jackknifing a crawler crane boom or boom/jib combination, or securing a crawler crane as a result of an exceedance or expected exceedance of wind speed thresholds). Such on-site engineer must be familiar with the thresholds and procedures (including sequencing) to secure the crane for wind. Such engineer is responsible to verify i) crane operations cease when required by Sections IV and V above; ii) procedures (including sequencing) to secure the crane are followed; and iii) the crane is properly secured.
- b. Secure, at the cessation of crawler crane operations (e.g. the end of the shift or when wind thresholds in Sections IV and V are exceeded), the crane by laying down the boom or boom/jib combination, jackknifing the boom or boom/jib combination, or implementing other special protective measures. The on-site engineer described in (a) above shall verify that the crane was properly secured.

Prohibition on crawler cranes configurations that require certain actions to be taken at 20mph or less:

- VII. Until further notice, crawler cranes are not permitted to be operated where, in accordance with the DOB-approved site drawings for the crane configuration or manufacturer specifications for the crane configuration, the crawler crane configuration requires the following to be implemented at a wind speed (sustained or gust) of 20 mph or less: 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.

Exception: Such crawler cranes are permitted to be operated only where the crane meets all of the following conditions: i) located in a controlled access zone; ii) operations comply with Section VI above; and iii) the engineer required on-site by Section VI above is responsible for ordering the evacuation of the controlled access zone when necessary. For the purposes of this order, a controlled access zone shall meet the following requirements:

- i. The distance from the crane to the limits of the controlled access zone shall be at least equal to the length of the boom, jib and any other attachments;

- ii. The controlled access zone shall be established so as not to impact the public right-of-way or adjacent properties; and
- iii. The controlled access zone shall be managed in such a manner that it can be evacuated in case of emergencies.

On-site Application (CN) plans:

- VIII. As of the date of this order, all new and amended crawler crane on-site application (CN) plans must include the maximum wind threshold information in accordance with Sections IV and V above, and detail all procedures (including sequencing) to secure the crane for wind speeds in excess of such threshold. The equipment user must ensure that a copy of the above required documentation is kept in the crane cab at all times the crane is at the jobsite.

Record of securing the crawler crane:

- IX. At the cessation of crawler crane operations (e.g. the end of the shift or when wind thresholds in Sections IV and V are exceeded), 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 CN drawing number or manufacturer manual page that specifies the indicated out of service configuration;
 - c. Note the maximum wind speed allowed for such configuration as indicated in the referenced CN drawing or manufacturer manual;
 - d. Note the date and time of the entry;
 - e. Contain the name and signature of the hoisting machine operator; and

- f. Contain the name and signature of the on-site engineer when such engineer is required by Sections VI and VII.

Notification to the Department prior to certain crawler crane actions:

- X. The equipment user must notify the Department immediately prior to any of the following actions:
 - a. Setting up a crawler crane;
 - b. Taking down a crawler crane;
 - c. Moving a crawler crane onto or off of cribbing;
 - d. Moving a crawler crane up or down a ramp;
 - e. Laying down a crawler crane boom or boom/jib combination;
 - f. Jackknifing a crawler crane boom or boom/jib combination;
 - g. Implementation of other special protective measures to secure a crawler crane;
 - h. Raising a crawler crane boom or boom/jib combination from a laid down or jackknifed position, or removing other special protective measures;
 - i. Suspending operations during the course of a shift and securing a crawler crane as a result of an exceedance or expected exceedance of wind speed thresholds specified in Sections IV and V above (including keeping the crawler crane up in an out-of-service configuration);
 - j. Securing a crawler crane at the end of a shift as a result of an exceedance or expected exceedance of wind speed thresholds specified in Sections IV and V above (including keeping the crawler crane up in an out-of-service configuration);
 - k. Taking additional measures to secure a crane (e.g. if the crane was originally left in one configuration at the end of a shift, but must be placed in another configuration in anticipation of high winds); or
 - l. Delaying or not starting operation at the beginning of a shift as a result of an exceedance or expected exceedance of wind speed thresholds specified in Sections IV and V above.

- XI. The notification described in Section X above must be e-mailed to canddnotifications@buildings.nyc.gov. The subject of the e-mail must be titled "Crawler Crane Action: Job address, CN Number (where applicable)."
- XII. Where the notification is made as a result of items (a) through (k) in Section X above, the equipment user, in the body of the e-mail, must:
- a. Describe the nature of the action, per Section X above;
 - b. Provide an estimated schedule of when such action will begin and be completed. Where such schedule changes, the equipment user must email the Department, attaching a copy of the original notification, with an updated schedule;
 - c. Indicate if the action occurs in, over, or requires the closure of streets, sidewalks, or other public ways; and
 - d. Indicate if the action occurs as a result of an exceedance or expected exceedance of wind speed thresholds specified in Sections IV and V above and describe the out of service configuration in which the crane will be left, and the maximum wind speed allowed for such configuration.
- XIII. Where the notification is made as a result of item (l) of Section X above, the equipment user, in the body of the e-mail, must:
- a. State that operation is delayed or not starting as a result of an exceedance or expected exceedance of wind speed thresholds;
 - b. Describe the out of service configuration in which the crane was left and the maximum wind speed allowed for such configuration;
 - c. Provide a copy of the record created by the hoisting machine operator per Section IX above;
 - d. If the crane boom or boom/jib combination is in a jackknifed or laid down position, attach a photograph of the crane as it appears at the time;
 - e. If other special protective measures are required, attach a photograph showing implementation of such measures; and
 - f. Indicate if the crane is located on or over a street, sidewalk, or other public way.

Notification to the Department following the completion of certain crawler crane actions:

- XIV. Following the completion of any action described in items (a) through (k) in Section X above, the equipment user must send an additional email to the Department, responding to the original notification to the Department required by Section XII above. In the body of this additional e-mail, the equipment user must:
- a. State that the action has been completed; and
 - b. Where the crawler crane boom or boom/jib combination was laid down, jackknifed, or other special protective measures were implemented, or where the crane was secured as a result of an exceedance or expected exceedance of wind speed thresholds specified in Sections IV and V above (including keeping the crawler crane up in an out of service configuration), provide a copy of the record created by the hoisting machine operator per Section IX above, and attach a photograph of the crane as it appears at the completion of the action.
- XV. Where a notification was made as a result of items (i) or (l) of Section X above, and the operation of the crane is to resume that same day, the equipment user must send an additional email to the Department, responding to the original notification to the Department required by Section XIII above. In the body of this additional e-mail, the equipment user must state that the operation of the crane is resuming and that the wind has dropped below the thresholds indicated in Sections IV and V above.

Exemptions:

- XVI. The following types of crawler cranes are exempt from the requirements of this order. Such cranes must be operated and secured 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.
- a. Crawler cranes equipped as a pile driver.
 - b. Crawler cranes equipped as a clamshell.
 - c. 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 (e.g. the end of the shift or when wind thresholds in are exceeded).



Rick D. Chandler, P.E., Commissioner