

CURTIS ENGINEERING CORPORATION

October 10, 2007

STATE OF CALIFORNIA
DEPARTMENT OF INDUSTRIAL RELATIONS
OCCUPATIONAL SAFETY AND HEALTH
STANDARDS BOARD
2520 Venture Oaks Way, Suite 350
Sacramento CA 95833

ENGINEERS
Heavy Industrial
Marine Waterfront
CRANE CERTIFICATIONS
Cal-OSHA Approved #CA51
Fed-OSHA Maritime Cranes

Attn: Michael Manieri, Principal Safety Engineer
Subject: Submittal of a PROPOSED STATE STANDARD
Title 8, Chapter 4
Hammerhead and Luffing Tower Cranes

Dear Michael Manieri:

Thank you for your valuable coordination of the various proposals under consideration by the OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD.

As a registered engineer active for the past 15 years in providing engineering for tower crane foundations and tie-in attachments to building, I am submitting a necessary addition to Section 4884, perhaps as (h).

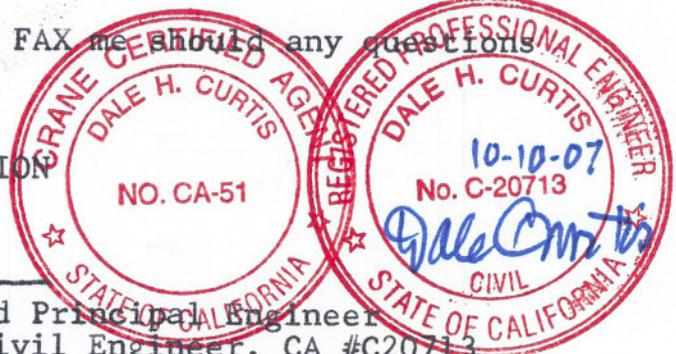
Basically, this attached proposal is necessary for public safety and occupational safety due to older components being a part of tower cranes which are 20-years old.

The BOARD's consideration of the attached proposal is herein requested.

Please feel free to call or FAX me should any questions arise.

Respectfully submitted,
CURTIS ENGINEERING CORPORATION

Dale H. Curtis



Dale H. Curtis, President and Principal Engineer
Registered Civil Engineer, CA #C20713
Renews Sep. 30, 09
Crane Certified Agent, California #CA-51

Attachment: Proposal wording to add to Section 4884
dated October 8, 2007

✓ Submitted in triplicate.

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OCCUPATIONAL SAFETY AND HEALTH
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CALIFORNIA OCCUPATIONAL SAFETY & HEALTH

PROPOSED STATE STANDARD
Title 8, Chapter 4

Add following statement regarding Hammerhead and
Luffing Tower Cranes to Group 13 Safety Orders:

Section 4884:

- (h) Hammerhead and Luffing Tower Cranes older than
20 years shall not be climbed and/or tied to
any structure. Cranes older than 20 years shall be
only used as free-standing tower cranes.
Furthermore, any tower cranes older than 30 years shall
not be used on construction jobsites.

Note: Multiple justifications will be submitted at time of
(or before) public hearings.

Submitted by CURTIS ENGINEERING CORPORATION

Dale H. Curtis, P.E.,

President & Crane Certified Agent #CA-51
Licensed by State of California

Date: October 8, 2007

ACTUAL PROBLEMS encountered with older Tower Cranes.

These problems directly affect occupational safety and public safety.

Background: Except for a few contractor-owned tower cranes, most tower cranes are owned by a company which enters into a "bare-rental" agreement with the tower crane user (contractor). The crane owner supplies the technician, technical support and replacement component inventory. However, on old tower cranes technical support has been marginal and replacement components not readily available.

PROBLEMS ENCOUNTERED:

- ① Operational manuals are not often complete for specific older tower cranes. Older manuals often do not show accurate values for foundation reaction forces and for forces needed for engineer to design tie-in struts to adjacent structure.
- ② Tower cranes manufacturer's technical and service bulletins not included in operational manual.
- ③ Tower crane manufacturer, in Europe, is no longer in business, resulting in lack of manufacturer's technical support.
- ④ Crane owner unable to always furnish a competent "technician" for either climbing or dismantling. Crane user (contractor) has to rely upon other sources for attempting to locate any competent technician.
- ⑤ Crane owner not maintaining readily available O.E.M. replacement components due to parts wearing out rapidly. Questionable material and "salvage" parts being used to replace worn-out parts.
- ⑥ Owners of older tower cranes writing "bare-rental" contracts in which the crane user (contractor) becomes responsible and liable for on-going maintenance; plus engineering for tie-in struts; and climbing + dismantling expenses. Some crane users do not or financially cannot take on these responsibilities.
- ⑦ Almost all tower cranes, which are climbed to higher configurations, subsequently are tied-in to the adjacent structure (or building). Tie-in collars for these old cranes often appear to be worn out and without new connection components. Some collars appear to have been "salvaged" from other tower cranes. Some of us supplying engineering services for these older collars are able to show additional strengthening necessary. Other engineering firms do not have the experience to recognize these problems.

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PROBLEMS continued

⑧ A specific 2007 example in Long Beach involves a 1983 tower crane climbed to a hook height of 387' and tied to the building at two different elevations: the slewing gear assembly broke and the swing motion could only be accomplished manually when the crane was climbed down to a height of 255', an elevation which was the highest that the large assist crane could reach to either replace the slewing gear and/or dismantle the tower crane.

⑨ When cranes are "climbed" to increased heights, the old climbing cages and related components need to be in like-new condition. It is almost impossible for crane owners to provide older climbing assemblies in good condition.

and

⑩ Fatigue due to many years of usage becomes an important consideration for the safe operation of tower cranes, but is an unknown factor of older tower cranes.

Respectfully submitted by Cal-OSHA Certified Agent #CA-51.