Industry Plant Consultative Committee

Master Builders Association New South Wales | CFMEU Construction | NSW WorkCover

Safety Alert

December 2014

RISK OF FALLS WHEN USING TOWER CRANES

This alert provides guidance to designers, manufacturers, suppliers, installers, operators, and persons with control of sites on how to minimise the risk of falls when using tower cranes.

BACKGROUND

Persons who access areas of a tower crane may be exposed to the risk of a fall resulting in serious injury or death. Crane personnel have fallen from the machine deck, and also from the access system within the tower.

CONTRIBUTING FACTORS

Falls can occur over unguarded edges, through open penetrations and from ladders. The likelihood of falls occurring is substantially influenced by the design of the access system.

Recent inspections of tower cranes indicate that fall protection, particularly the design of access systems, can be improved. These improvements may apply to both older and newer model cranes, from various manufacturers and suppliers.

ACTION REQUIRED

Tower cranes must have sufficient access to all work areas of the crane, including control stations and all parts requiring regular inspection or maintenance.

Risk management is usually most effective at the design stage. **Designers and manufacturers** of new tower cranes or components must ensure access is designed to minimise risk of falls, including by:

- Guarding edges with physical barriers, such as railings or screens
- Covering or guarding penetrations and openings
- Minimising distances between landings
- Including measures to prevent falling past a landing, such as staggered ladders, change of direction, trapdoors or similar
- Using sloping ladders instead of vertical ladders where possible

- Ensuring ladder dimensions; width, rung spacing, clearance behind rungs etc, are sufficient to allow correct climbing technique
- Ensuring ladder dimensions; tread depth, rung shape, diameter and similar allow for climber comfort
- Including cages, hoop guards or similar on ladders when the crane structure does not provide dorsal protection

Where risk of falls cannot be sufficiently minimised by design, information on the remaining risk and alternate controls must be passed down the supply chain, for example fall arrest equipment used during crane erection.

Persons who **supply** tower cranes to site must ensure access sufficiently minimises risk of falls, so far as reasonably practicable. This includes:

- Inspecting out of service tower cranes and identifying areas where access could be permanently modified to include design features listed above
- Making the appropriate modifications, in consultation with the crane manufacturer or designer to ensure crane serviceability is not adversely affected
- Where permanent modifications cannot be made, developing systems to ensure future sites are aware of the remaining risks and appropriate measures to minimise them

Issues identified on out of service cranes are likely to be present on similar models currently in service. Whilst it may be reasonably practicable to wait until a crane is dismantled before making the modifications, interim measures to minimise falls may need to be developed for the duration of any current installation.

Persons who **install, erect and commission** tower cranes also have a responsibility for minimising risk of falls from tower cranes, including by:

- Erecting tower cranes in accordance with designer, manufacturer or supplier's instructions
- Ensuring any guardrails, platforms, covers or similar that were removed during the previous dismantle are reinstalled
- Ensuring compatibility of components, particularly alignment of ladders within adjoining tower sections, as the erection proceeds
- Reporting any areas where a potential risk of a fall exists back to the supplier

Persons who **service, maintain, operate or have control of site** with tower cranes can also minimise risk of falls from tower cranes by:

- Restricting tower crane access to essential personnel only
- Inspecting existing tower crane installations and identifying areas where potential fall hazards exist
- Reporting potential fall hazards to the supplier and consulting with them to develop appropriate interim control measures to implement for the duration of the existing crane installation.

Persons should not, however, make alterations to tower cranes without permission from a suitably qualified person, such as the designer or manufacturer.

FURTHER INFORMATION

The Work Health and Safety (WHS) Act requires persons conducting a business or undertaking to ensure, so far as is reasonably practicable, that workers and other persons at a workplace are not exposed to risks arising from the business or undertaking, including the risk of falls. Refer sections 19 to 24 of the WHS Act.

Part 4.4 of the WHS Regulation place specific obligations on duty holders to identify reasonably foreseeable risk of falls, and then manage accordingly.

Also, refer to:

- Australian Standard AS1418 Part 1 *Cranes, hosts and winches – general requirements*
- Australian Standard AS1418 Part 4 *Cranes, hosts and winches – tower cranes*

Australian Standards available at www.saiglobal.com

- *How to manage work health and safety risks: Code of practice* (Catalogue no. WC03565)
- *Managing the risks of falls at workplaces: Code of Practice* (Catalogue no. WC03566)
- *Managing the risks of plant in the workplace: Code of Practice* (Catalogue no. WC03838)

Visit www.workcover.nsw.gov.au or phone **13 10 50**

- *Safe design, manufacture, import and supply of plant Guidance Material*
- *Cranes Code of Practice (draft only)*

Draft Codes of Practice available at www.safeworkaustralia.gov.au

Visit Master Builders Association of NSW at www.mbansw.asn.au

Visit Construction Forestry Mining Energy Union NSW at www.cfmeunsw.asn.au