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OVERHEAD CRANES

All PFI Standards and Best Practices are advisory only. There is no agreement to adhere to any PFI Standard or Best Practice and their use by anyone is entirely voluntary.

Revision: 4-7-2016

PFI Overhead Crane Best Practice

CRANES – OVERHEAD BRIDGE

These practices are intended to maintain a safe workplace for employees; therefore, it cannot be overemphasized that only qualified and licensed individuals shall operate these devices. The guidance within these practices applies to the use of cranes and hoists installed in or attached to buildings and to all personnel who use such devices.

Shop Foreman is responsible for:

- Ensuring that employees under their supervision receive the required training and are certified and licensed to operate the cranes and hoists in their areas.
- Scheduling vendor to perform required quarterly preventative maintenance and OSHA compliance inspections.
- Scheduling repairs and following through with completion of scheduled repairs.
- Ensuring that hoisting equipment is inspected and tested monthly by a responsible individual.

Crane and Hoist Operators are responsible for:

- Operating hoisting equipment safely.
- Conducting functional tests and inspection prior to using the equipment.
- Selecting and using rigging equipment appropriately.
- Inspecting all rigging prior to use.
- Having a valid operator's license on their person while operating cranes or hoists.

Safety Department is responsible for:

- Conducting training for all Crane & Hoist Operators
- Issuing licenses to Crane and Hoist Operators
- Periodically auditing inspection forms and processes for third party vendor.
- Interpreting crane and hoist safety rules and standards.

SAFE OPERATING REQUIREMENTS

All workers who use any crane or hoist shall have an operator's license. The company issues licenses for authorized employees who have been specifically trained in crane and hoist operations and equipment safety. To be qualified as a Crane and Hoist Operator, the candidate shall have received a combination of classroom and hands-on training with an exam to follow. Training shall include at a minimum safe operations of the crane, inspection requirements, rigging, hand signals, and equipment disconnect procedures. Upon successful completion of training, the crane and hoist operator will work directly with a trained operator for the first 30 days and then receive a license to operate the crane independently.

Crane and Hoist Operators must renew their license every three years by satisfying the requirements described above.

GENERAL SAFETY RULES

Operators shall comply with the following rules while operating the cranes and hoists:

- Do not engage in any practice that will divert your attention while operating the crane.
- Respond to signals only from the person who is directing the lift, or any appointed signal person. Obey a stop signal at all times, no matter who gives it.
- Do not move a load over people. People shall not be placed in jeopardy by being under a suspended load. Also, do not work under a suspended load unless the load is supported by blocks, jacks, or a solid footing that will safely support the entire weight. Have a crane or hoist operator remain at the controls or lock open and tag the main electrical disconnect switch.
- Ensure that the rated load capacity of a crane's bridge, individual hoist, or any sling or fitting is not exceeded. Know the weight of the object being lifted or use a dynamometer or load cell to determine the weight.
- Check that all controls are in the OFF position before closing the main-line disconnect switch.
- If spring-loaded reels are provided to lift pendants clear off the work area, ease the pendant up into the stop to prevent damaging the wire.
- Avoid side pulls. These can cause the hoist rope to slip out of the drum groove, damaging the rope or destabilizing the crane or hoist.
- To prevent shock loading, avoid sudden stops or starts. Shock loading can occur when a suspended load is accelerated or decelerated, and can overload the crane or hoist. When completing an upward or downward motion, ease the load slowly to a stop.

OPERATION RULES

Pre-operational Test

At the start of each work shift, operators shall do the following steps before making lifts with any crane or hoist.

- Test the upper-limit switch. Slowly raise the unloaded hook block until the limit switch trips.
- Visually inspect the hook, load lines, trolley, and bridge as much as possible from the operator's station; in most instances, this will be the floor of the building.
- Test all direction and speed controls for both bridge and trolley travel.
- Test all bridge and trolley limit switches, where provided, if operation will bring the equipment in close proximity to the limit switches.

- Test the pendant emergency stop.
- Test the hoist brake to verify there is no drift without a load.
- If provided, test the bridge movement alarm.
- Lock out and tag for repair any crane or hoist that fails any of the above tests.

Moving a Load

- Center the hook over the load to keep the cables from slipping out of the drum grooves and overlapping, and to prevent the load from swinging when it is lifted. Inspect the drum to verify that the cable is in the grooves.
- Use a tag line when loads must traverse long distances or must otherwise be controlled.
- Manila rope may be used for tag lines.
- Plan and check the travel path to avoid personnel and obstructions.
- Lift the load only high enough to clear the tallest obstruction in the travel path.
- Start and stop slowly.
- Land the load when the move is finished. Choose a safe landing.
- *Never* leave suspended loads unattended. In an emergency where the crane or hoist has become inoperative, if a load must be left suspended, barricade and post signs in the surrounding area, under the load, and on all four sides. Lock open and tag the crane or hoist's main electrical disconnect switch.

Parking a Crane or Hoist

- Remove all slings and accessories from the hook. Return the rigging device to the designated location.
- Raise the hook at least 2.1 m (7 ft) above the floor.
- Store the pendant away from aisles and work areas, or raise it at least 2.1 m (7 ft) above the floor.
- Place the emergency stop switch (or push button) in the OFF position.