

Pre-Planning for Safe Crane Operation

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Before you begin

It's important for the entire team to understand the specific responsibilities of crane operators, riggers and signal persons. All operators must review standard hand signals and determine whether a dedicated signal person is involved in the lift or not.

What you will learn

- o The importance of pre-shift inspections
- o The importance of properly pre-planning a lift

Introduction

Pre-shift crane inspections and thoroughly pre-planned lifts are essential for job-site safety. Neglecting to properly inspect a crane before a shift can result in failure of the equipment. This may cause damage to the machinery, injury to workers on the scene or even death. Failing to pre-plan properly for a lift may also result in damage to the equipment and/or serious injury or death to the operator or ground crew.

Discussion

Pre-shift inspections prior to crane use should include a review of: structures, wire rope, hydraulic systems and electrical systems. It is advised that a check list be used prior to the inspection. Two categories of inspections are required for safe operation: frequent and periodic. Frequent inspections include pre-shift inspections and monthly inspections for the crane, wire rope and hook. The periodic inspection may also be referred to as an annual inspection. Inspect =wire ropes daily, and you must follow load charts precisely. The crane operator is responsible for the pre-shift inspection, and a competent person within the organization is responsible for the monthly inspection. A qualified person must do the annual (or periodic) inspection.

During the inspections, you are looking for cracks in structures, as well as leaks in hoses, cylinders and control valves. Check wire rope for broken or frayed areas, crushed portions, general wear and proper end connections. Also, check operator aids and safety devices that may be malfunctioning. If you find something wrong during the inspection, document the deficiency and give it to your supervisor. If the deficiency is a safety device of any kind or a structural issue, you must tag-out the crane and remove it from service. This holds true for wire rope and hooks. If the deficiency is an operator aid, the crane can be used provided the alternate measures are used in accordance with OSHA and then repaired.

Pre-planning a lift means proper site preparation, which involves: ground prep, identifying the work zone and locating aboveground utilities. Know your surroundings and apply safe clearance measures to power lines. Ensure there are no unauthorized personnel in the work zone. You must determine whether or not the crane is capable of making that specific lift and whether the lift is within the capacity of the crane.

There must be a greater level of awareness with all aspects of crane operation. The operator must have knowledge of site prep, power line safety, standard hand signals, basic rigging and be aware of the responsibilities of each person involved in the lift or work zone areas. Any deviation from this can result in catastrophic consequences.

Conclusion

Pre-shift inspections are critical for protecting the equipment, and most importantly, the people on the job site. Putting careful thought and consideration into pre-planning every lift can make certain the crane isn't pushed beyond its capacity. It will also ensure the safety of the operator and the ground crew. When done correctly, crane operations can be completely safe, without incident.

References

There are many resources available to help you understand the rules and regulations that apply to safe crane operation, including: <http://www.osha.gov/index.html> and <http://www.nccco.org/>.

Author

Dave Foster has 36 years of experience in the truck equipment industry. His insider knowledge and expertise in all aspects of the business ranges from technical training to sales to engineering to being on the shop floor. He is a qualified crane and rigging inspector. In addition to being a certified factory trainer, he has a Certificate of Competency under current Occupational Safety and Health Administration (OSHA) and American National Standards Institute/American Society of Mechanical Engineers (ANSI/ASME) codes and is a National Commission for the Certification of Crane Operators (NCCCO) TSS certified crane operator.