City of Urbandale

Cranes & Hoists Safety Policy

Contents

Purpose

Employees of the City of Urbandale and Urbandale Water Utility use cranes, hoists, and rigging equipment to lift and move materials.

This policy explains how to use this equipment safely and what training is required. The goal is to keep all employees safe while working.

Copies of this policy are available:

- Parks & Public Works Maintenance Facility (9401 Hickman Road), in the office
- Water Utility (3720 86th Street), in the office
- Online at www.urbandale.org/safety
- By contacting the Director of Risk Management/Support Services

Scope

This policy applies to all employees who use cranes, hoists, or rigging equipment as part of their job.

Leadership and Accountability

The Director of Risk Management/Support Services or a Safety Leadership representative will review this policy every year to make sure it is working and being followed.

Department Directors (or their representatives) must:

- Make sure only trained and approved employees operate equipment
- Ensure operators follow safe work practices
- Approve any equipment changes only with written permission from the manufacturer

Supervisors must:

- Work with Safety Leadership to enforce this policy
- Make sure inspections are completed
- Ensure equipment is safe to use
- Set up a maintenance program based on manufacturer guidelines

Employees must:

- Follow this policy
- Report any damage or needed repairs

Crane operators are responsible for the entire lift. They must:

- Perform required inspections
- Make sure the crane is maintained
- Keep people away from hazards
- Know the weight of loads and proper rigging

Questions or comments should be directed to:

- Parks & Facilities Supervisors
- Assistant Director of Public Works
- Water Utility Distribution Manager
- Director of Risk Management/Support Services

Employee Training

Employees must **not operate equipment** until they:

- Complete training
- Are approved as qualified operators

Training must include:

- Wire ropes
- Slings
- OSHA and ANSI standards
- Manual and powered hoists
- Safety awareness and lockout/tagout procedures
- Basic rigging
- Inspection procedures
- Fire extinguisher use

Retraining

Employees must complete refresher training every year. Retraining may also be required if an employee:

- Uses equipment unsafely
- Does not follow this policy or safety standards

Procedures

All crane and hoist equipment must be used according to manufacturer instructions.

If instructions are not available:

- A qualified engineer must determine safe limits
- These limits must be documented

Rules:

- Do not exceed equipment capacity
- Only trained employees may operate cranes
- Load limits must be clearly marked
- Follow ANSI safety standards (ANSI B30.2.0-1967)

Lockout/Tagout must be used before performing maintenance on cranes (*See Urbandale Lockout/Tagout Policy*).

Inspections

Cranes must be inspected at least monthly (*See Appendix C*).

Inspect for:

- Mechanical problems
- Leaks
- Hook damage or cracks
- Chain wear or twisting
- Rope damage
- Sling defects

Also test:

- Limit switches
- Controls
- Emergency stop
- Hoist brake
- Alarms

If equipment fails any test:

- Lock it out
- Tag it
- Repair before use

Annual Inspections

A qualified third party must inspect equipment once a year.
Records must include:

- Inspector’s name
- Date
- Equipment ID

Unsafe equipment must be tagged and not used until fixed.

Operational Procedures

Only approved employees may operate cranes. Operators must:

- Stay focused
- Follow signals from the designated person
- Always obey stop signals
- Never lift loads over people
- Never stand under suspended loads
- Stay at controls or lock/tag equipment if leaving
- Never exceed load limits
- Know load weight
- Start and stop slowly
- Avoid side pulling

Attaching the Load

- Do not twist or kink chains/ropes
- Do not wrap ropes around loads
- Attach load properly to hook
- Make sure path is clear before lifting.

Moving a Load

- Center the hook
- Check cable placement
- Use tag lines if needed
- Plan the path
- Lift only as high as needed
- Move slowly
- Set load down safely

Never leave a load hanging unattended. If equipment fails:

- Block off the area
- Post warning signs
- Lock and tag equipment

Parking a Crane or Hoist

- Remove slings
- Store equipment properly
- Turn off emergency stop

Rigging

Use only safe, undamaged rigging equipment. Before use:

- Inspect all slings and attachments
- Remove and destroy defective equipment

Remove equipment if it shows:

- Wear, cuts, or broken fibers
- Heat damage
- Cracks or deformation
- Broken wires
- Bent hooks

Rigging a Load & Safe Work Practices for Slings

- Know the weight of the load
- Use the correct sling size
- Do not use manila rope
- Install hardware correctly
- Use padding on sharp edges
- Do not use modified or damaged equipment

- Follow proper clip installation
- Balance the load
- Test lift a few inches first

Do not overload cranes. If overload is suspected:

- Remove from service
- Inspect and repair before reusing

Working at heights on cranes or hoists:

- Use fall protection above 4 feet (*See Urbandale Fall Protection Policy*).
- Do not ride cranes
- Do not board cranes unless locked/tagged out

Signals

- Use standard ANSI hand signals
- Signals must be clear
- Special signals must be agreed upon in advance

Maintenance

- Follow manufacturer recommendations
- Keep written maintenance and test records
- Keep records for the life of the equipment

Non-Owned Cranes, Hoist and Rigging Equipment

- Employees may only use non-city equipment if:
- Approved by a supervisor
- Proof of inspection is provided

Fire Extinguishers

- Cranes must have access to fire extinguishers
- Use CO_2 or dry chemical extinguishers

Appendix A: Definitions

ANSI - the American National Standards Institute.

Appointed - assigned specific responsibilities by the employer or the employer's representative.

Brake - a device used for retarding or stopping motion by friction or power means.

Bridge - that part of a crane consisting of girders, trucks, end ties, foot-walks, and drive mechanism that carries the trolley or trolleys.

Bridge travel - the crane movement in a direction parallel to the crane runway.

Crane - a machine for lifting and lowering a load and moving it horizontally, with the hoisting mechanism an integral part of the machine. Cranes, whether fixed or mobile, are driven manually or by power.

Designated - selected or assigned by the employer or the employer's representative as being qualified to perform specific duties.

Drum - the cylindrical member around which the ropes are wound for raising or lowering the load.

Emergency stop switch - a manually or automatically operated electric switch to cut off electric power independently of the regular operating controls.

Hoist - an apparatus that may be a part of a crane, exerting a force for lifting or lowering.

Limit switch - a switch that is operated by some part or motion of a power-driven machine or equipment to alter the electric circuit associated with the machine or equipment.

Load - the total superimposed weight on the load block or hook.

Load block - the assembly of hook or shackle, swivel, bearing, sheaves, pins, and frame suspended by the hoisting rope.

Overhead crane - a crane with a movable bridge carrying a movable or fixed hoisting mechanism and traveling on an overhead fixed runway structure.

Rated load - the maximum load for which a crane or individual hoist is designed and built by the manufacturer and shown on the equipment nameplate(s).

Rope - refers to wire rope, unless otherwise specified.

Runway - an assembly of rails, beams, girders, brackets, and framework on which the crane or trolley travels.

Side pull - that portion of the hoist pull acting horizontally when the hoist lines are not operated vertically.

Span - the horizontal distance center to center of runway rails.

Stop - a device to limit travel of a trolley or crane bridge. This device normally is attached to a fixed structure and normally does not have energy absorbing ability.

Trolley - the unit that travels on the bridge rails and carries the hoisting mechanism.

Trolley travel - the trolley movement at right angles to the crane runway.

Wall crane - a crane having a jib with or without trolley and supported from a sidewall or line of columns of a building. It is a traveling type and operates on a runway attached to the sidewall or columns.

Appendix B: Crane & Hoist Locations

Description	Location
Truck mounted crane hoist	Urbandale Water Utility – 3720 86th Street
Mechanics bay	Parks & Public Works Maintenance Facility – 9401 Hickman Road
Weld shop	Parks & Public Works Maintenance Facility – 9401 Hickman Road
Fleet area	Parks & Public Works Maintenance Facility – 9401 Hickman Road

Appendix C: Routine Inspection Checklist

Yes	No	
		All functional operating mechanisms for maladjustment interfering with proper operation?
		Leakage in lines, tanks, valves, drain pumps, and other parts of air or hydraulic systems?
		Hooks for deformation, chemical damage, or cracks. Hooks having more than 15% more than normal throat opening or more than 10 degrees twist from the plane of the unbent hook?
		Hooks. Dye penetrant, magnetic particle, or other suitable crack-detecting inspection performed at least once a year?
		All functional operating mechanisms for excessive wear of components?
		Rope reeving for noncompliance with manufacturer's recommendations?
		Condition of wire rope is acceptable for use?
		Deformed, cracked, or corroded members?
		Cracked or worn sheaves or drums?
		Loose bolts, nuts, or rivets?
		Worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices?
		Excessive wear in brake system parts, linings, pawls, and ratchets?
		Load, wind and other indicators over their full range, for any significant inaccuracies?
		Gasoline, diesel, electric, or other power plants for improper performance or noncompliance with applicable safety requirements?
		Electrical apparatus, for signs of pitting or any deterioration of controller, master-switches, and push button stations?
		Required warning labels absent or illegible?
		Supporting structure, trolley and bridge for alignment and continued ability to support the imposed loads?