

E Light Electric Services

CRITICAL LIFTS

Scope

This section includes guidelines and requirements applicable to critical lifts and describes the planning and documentation required to perform a critical lift.

References

29 CFR 1926, SUBPART N
ANSI/ASME B-30.7 SERIES
RESPONSIBILITIES

Responsibilities

Management

- Make determinations of critical lifts
- Provide supervisor & employee training
- Provide safe and proper equipment for critical lifts
- Provide inspection procedures

Supervisors

- Follow guidelines and inspection procedures
- Supervise all critical lifts
- Ensure employees have adequate operational knowledge & experience
- Immediately remove from service any equipment that fails inspection

Employees

- Follow lifting & rigging procedures
- Immediately report any problems with equipment or procedures
- Not attempt any critical lifts unless authorized & approved

Critical Lift Determination

The decision to designate a lift as a critical lift is a management decision. Guidelines provided here are intended to aid in making that decision. A lift should be designated as a critical lift if dropping, upset or collision could cause or result in any one of the following:

1. Damage that would result in serious economic consequences.
2. Damage that would result in unacceptable delay to schedule or other significant deleterious programmatic impact (such as loss of vital data)

3. Undetectable damage that would jeopardize future operations or safety of a facility.
4. Significant release of radioactive or other hazardous material to the environment or creation of an undesirable condition.
5. Personnel injury or significant adverse health impact, either onsite or offsite.
6. In addition, a lift that meets one of the following criteria shall be designated as a critical lift:
 - a. Any lift that requires the use of multiple cranes.
 - b. Any lift that exceeds 80% of the crane's rated capacity within the lift configuration of the crane.
 - c. The item to be lifted requires exceptional care in handling because of size, weight, close-tolerance installation, high susceptibility to damage or other unusual factor.
 - d. The item, although non-critical, requires exceptional care in handling because it is being lifted above a critical item.

The manager who has the responsibility for the item being lifted has the authority to require that it be handled as a critical lift. In addition, the manager at the facility where the lift will be performed also has the authority to require that it be handled as a critical lift. The manager who designates the lift as a critical lift shall ensure that a person-in-charge (PIC) is assigned. (The PIC need not be in the manager's organization).

Critical Lift Procedures

The PIC shall ensure that a step-by-step procedure is prepared for critical lifts. Although individual procedures are prepared for one-time critical lifts, general procedures may be employed to accomplish routine recurrent critical lifts, for example, a general procedure may be used to lift an item or series of similar items that are frequently lifted or repeatedly handled in the same manner. A critical lift procedure should contain the following, as applicable:

- Ø Identify the items to be moved.
- Ø Special precautions, if any (such as outrigger or track cribbing for mobile cranes).
- Ø Weight of the item and total weight of the load (For mobile cranes, see the manufacturer's instructions regarding components and attachments that must be considered as part of the load).
- Ø Center of gravity location.
- Ø A list of each piece of equipment (e.g., crane, hoist, fork truck), accessory, and rigging component (e.g., slings, shackles, spreader bars, yokes) to be used for the lift. (This list shall identify each piece of equipment by type and rated capacity).

- Ø Designated checkpoints and hold points and estimated instrument readings, as relevant, so that job progress can be checked against the plan.

NOTE: Sign-offs in the procedure are generally appropriate. For example, initial and time/date the procedure as key steps are completed. Hold points or sign-off points should be provided for personnel assigned to witness the work.

- Ø Rigging sketch(s), which include the following:

- Lift point identification.
- Method(s) of attachment.
- Load vectors.
- Sling angles.
- Accessories used.
- Other factors affecting the equipment capacity.
- Rated capacity of equipment in the configuration(s) in which it will be used. (For mobile cranes, many factors affect rated capacity, including boom length, boom angle and work area).

- Ø A load-path sketch that shows the load path and height at key points in the job. (For lifts with mobile cranes, include the crane position(s) relative to the load and relative to surrounding obstructions. Where appropriate, include floor-loading diagrams).

- Ø A sketch indicating lifting and travel speed limitations. (This may be noted on the load path sketch or on a separate sketch).

- Ø A sign-off sheet to verify that equipment and tackle inspections or tests are current.

NOTE: Practice lifts are recommended. (If used, requirements for the practice lift should be documented in the procedure).

Approval of Critical Lifts

The critical lift procedure should be approved as required by the responsible contractor's procedures. In the absence of direction from the contractor's procedures, a critical lift procedure shall be approved (signed and dated) by the following:

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- Ø Procedure author.
- Ø Manager of the lift operation.
- Ø PIC
- Ø Responsible safety organization

Revisions to Critical Lift Procedures

Revisions to the procedure shall be reviewed and approved through the same cycle as the original procedure.

Pre-lift Meeting

Before the critical lift is performed, a pre-lift meeting with all participating personnel shall be held. During the meeting, the critical lift procedure shall be reviewed and questions shall be resolved. The pre-lift meeting shall be documented.

Documentation

Critical lift documentation is required. When the job is finished, the PIC shall transmit the critical lift documentation to the manager (or designee) for whom the lift was done. This documentation is subject to audit for one year after the critical lift is completed.

Documentation of a critical lift shall include the following:

- Ø The critical lift procedure, recording job completion with approval signatures and hold point sign-offs.
- Ø Documentation of the pre-lift meeting; containing, as a minimum, the meeting date and list of attendees (NOTE: it is recommended that documentation of the pre-lift meeting be included as part of the critical lift procedure.
- Ø Any additional documentation deemed appropriate by the PIC or other responsible personnel (e.g., lessons learned).