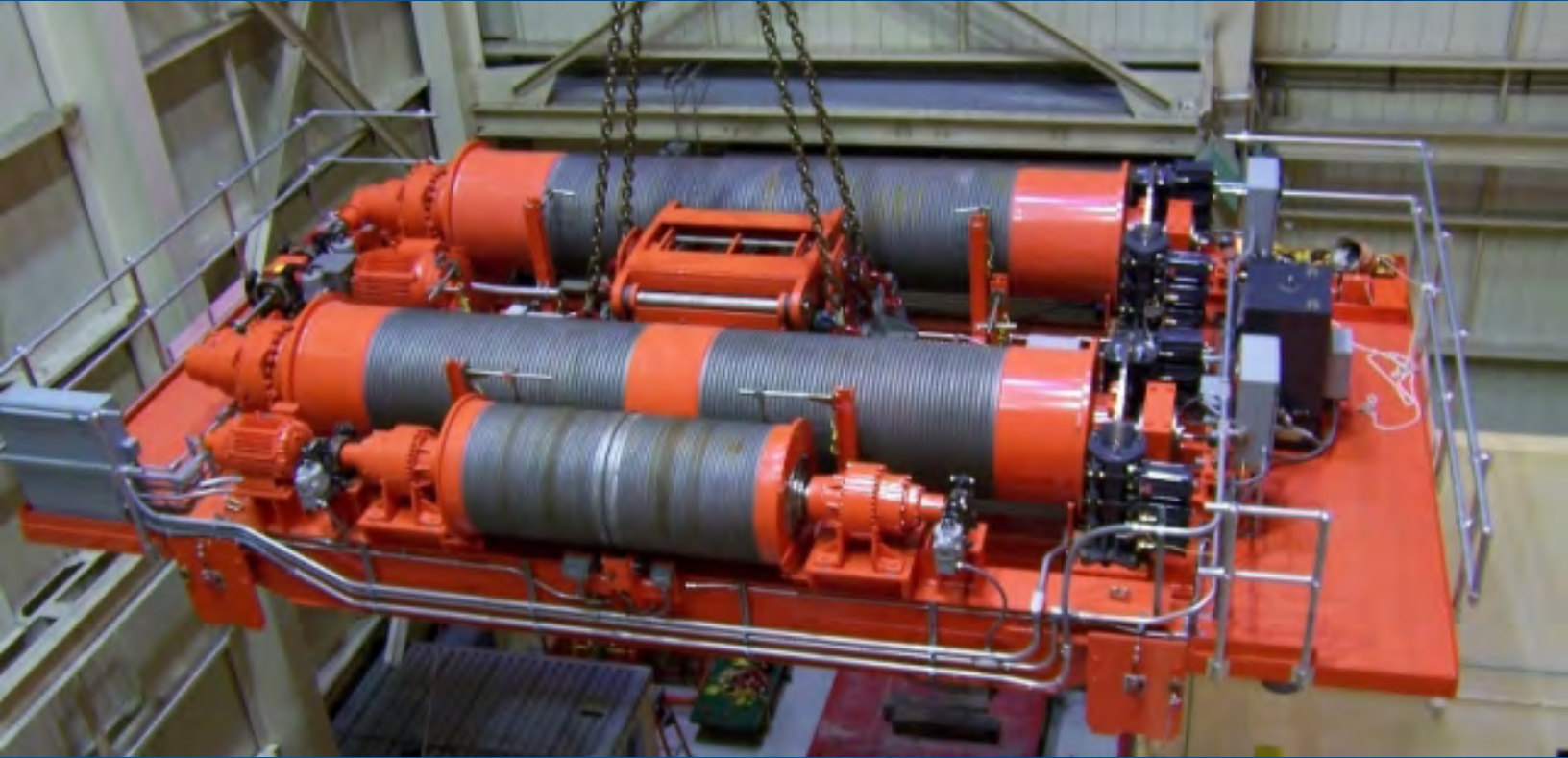

No Room for Error

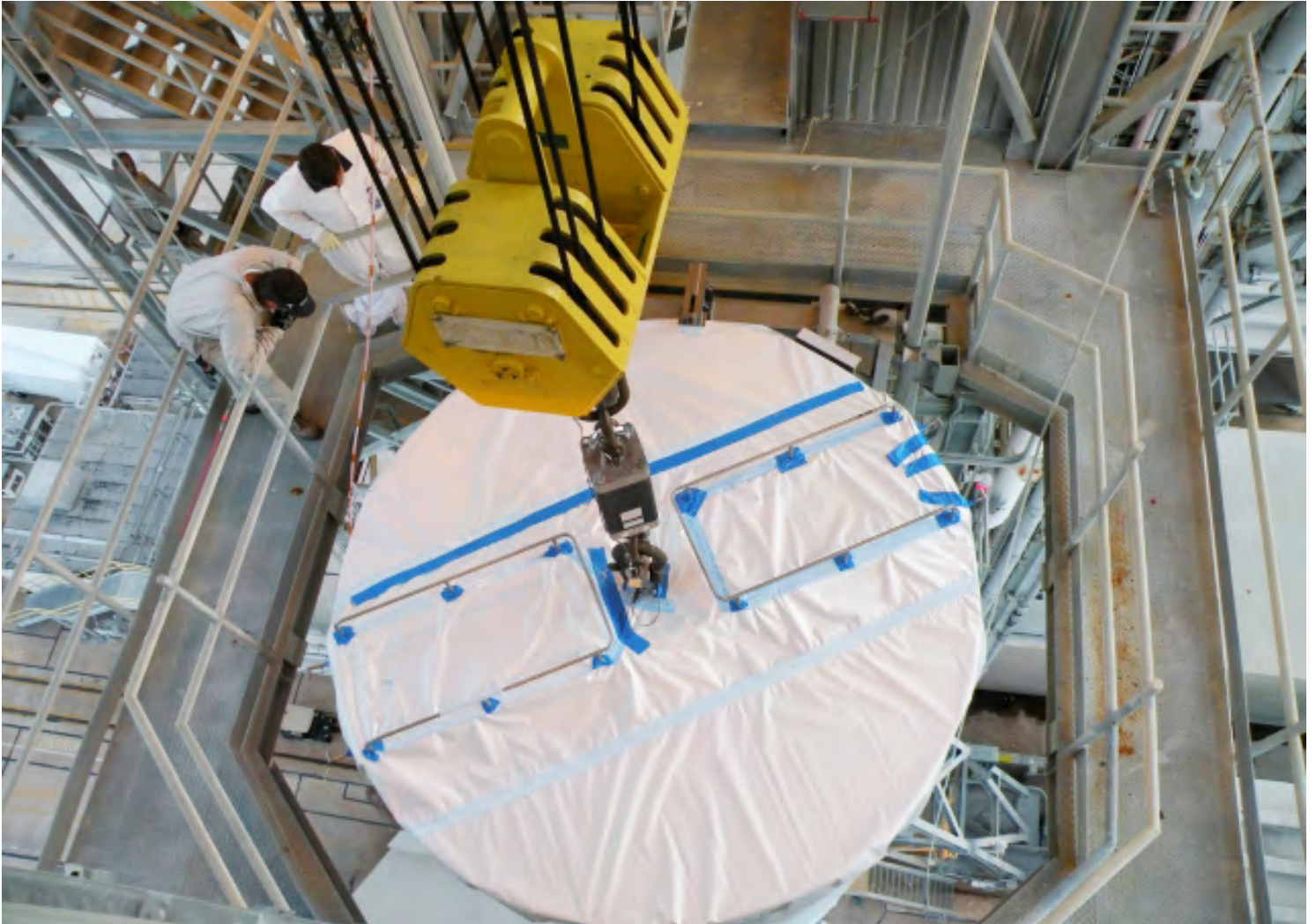
A Guide to Critical Lift





Any time a crane is used, it should be engaged with proper safety precautions and strict adherence to equipment guidelines and protocols to minimize the risk of accidents. There is a lot at stake when operating cranes – not only the load being lifted, but also the health and safety of the operators and others working nearby. Every company should put policies and procedures in place that will result in a safe lift every time.

In the world of cranes, there are situations that may call for going the extra mile in detailed planning. If, however, because the lift that needs to be performed is so important or unusual that there is simply no room for error. This is called a critical lift. Understanding what constitutes a critical lift and knowing how to plan for one is essential in a variety of industries, such as aerospace operations, nuclear facilities, oil and gas operations, and mining.



What is a Critical Lift?

A critical load is any lifted load whose uncontrolled movement or release could adversely affect any safety-related system when such a system is required for unit safety, or could result in potential off-site exposure in excess of the limit determined by the purchaser.

Based on our own extensive experience with critical lift cranes and drawing on multiple sources such as the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the U.S. Army Corps of Engineers, the Construction Safety Association of Ontario, and the U.S. Department of Energy, we've assembled the following robust list of characteristics that help define what should be considered a critical lift:



■ **Visibility**

The load must be manipulated outside the operator's view.

■ **Rigging**

Lifts involving an unusual, technically difficult, or non-routine rigging arrangement.

■ **Economics**

The damage to a unique high-value load could result in serious economic losses.

■ **Timing**

Damaging the load would cause unacceptable delay to an important project or operation.

■ **Facility**

Damage could be done, even unseen damage, that would compromise the safety, integrity, or operation of a site or facility now or in the future.

■ **Hazardous material**

Hoisting hazardous, explosive, or radioactive materials.

■ **Load**

The load is especially susceptible to damage because of its size or weight.

■ **Human safety**

When the public or personnel could be at risk of injury or death.

■ **Difficult maneuvers**

Lifts in congested areas, or involving the turning or flipping of a load where shock loading and/or side loading may occur.





How to Assess if a Critical Lift is Needed

The various characteristics listed above are a good place to start assessing whether or not any given lift should be considered critical, but to make a proper assessment, it may be useful to frame these concerns in the form of a checklist, such as:

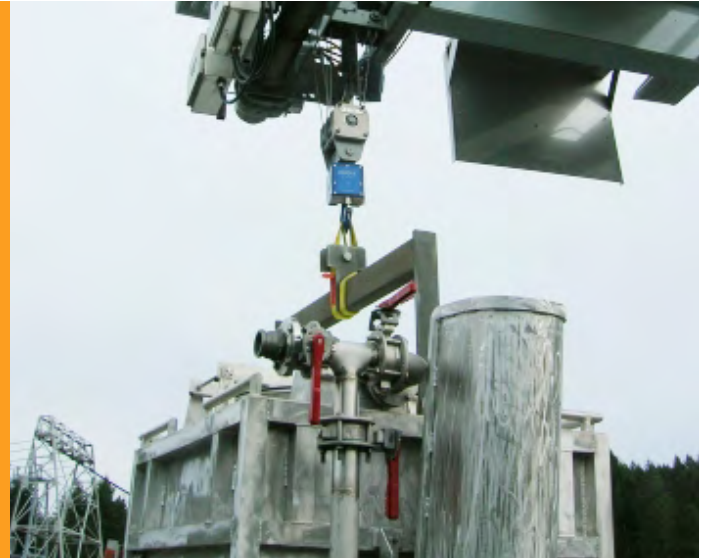
1. Will the load have to be picked up or moved outside the operator's view?
2. Will the lift involve an unusual or difficult rigging arrangement?
3. Is the load exceptionally valuable?
4. Would a failed lift cause unacceptable delay to a critical operation?
5. Could damage be done that would compromise the security or safety of the site/facility?
6. Does the load include hazardous, explosive, or radioactive materials?
7. Is the load especially unique in terms of its size, weight, or sensitivity?
8. Will the load be lifted or suspended above people?
9. Will the load be lifted or suspended above any critical or hazardous items?
10. Will the lift involve any unusual movements?

Answering "yes" to even one of these questions means it is a critical lift and should be treated as such.



Sourcing the Correct Equipment for a Critical Lift

Once a lift is determined to be critical, it is absolutely imperative to make sure the right equipment is available to perform the lift. The exact mix of features needed for any given critical lift will be specific to the situation. Engineering solutions available from American Crane for critical lift cranes include the following:



- Redundant braking systems
- Redundant reeving systems
- Single failure-proof designs
- Special under hook grapples and handling devices
- LC controls, including safety-critical features
- Anti-collision protection
- Redundant travel drives
- Real-time x, y, and z positioning
- Variable speed controls, including micro-speeds
- Comprehensive quality assurance oversight including ASME NQA-1
- Seismic qualifications
- NOG-1, NUREG 0554, and ASME NUM-1 Compliant designs

Learn More

A critical lift requires more extensive planning and preparation than other routine lifts. Knowing how to determine if a lift is critical, sourcing the right equipment, and careful planning are all essential elements to ensure the safety of everyone and everything involved, as well as the success of the lift itself.

For professional help and guidance on anything related to a critical lift, [contact the experts at American Crane.](#)





In an increasingly complicated marketplace, it is nice to know about a company whose capabilities you can rely on. At American Crane & Equipment Corporation, we are uniquely positioned to provide our customers with a single source to satisfy material handling requirements. This integrated approach includes project managers, engineers, complete manufacturing facilities and service technicians to help you with your material handling needs. Our company has a long standing reputation as a leading supplier of quality equipment and engineering services to customers throughout the world. American Crane & Equipment Corporation is here to make your job easier.”

Oddvar Norheim, President and CEO

A handwritten signature in white ink, appearing to read "Oddvar Norheim", positioned above a large, faint background image of a crane hook with "20 TON" written on it.

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