

Toolbox Talks 2

038: Unsafe Acts: Installing Motors

Discussion leader duties for this session:

Think about what's involved in transporting, setting, aligning, and connecting a motor.

What this Safety Talk covers:

Most injuries occur not due to unsafe conditions, but due to unsafe acts. This Safety Talk addresses unsafe acts in transporting, setting, aligning, and connecting motors.

Discussion notes:

Background

From the time a motor comes off the loading dock to the time it's ready to run, it presents many hazards. You can dislocate a shoulder or wrench your back moving the motor, slip on oil or grease from its fittings or bearings, slip on process fluids in the installation area, set it down on your fingers, be electrocuted at its terminals, or be injured by improper rotation procedures. That's only a partial list.

Some unsafe acts in motor installation

- Not inspecting and cleaning the motor before transporting it to the installation point. Clean grease off the shaft, and wipe the zircs (grease fittings) clean. Inspect the lifting eye(s) for damage.
- Not conducting basic receiving tests on the motor before installing it. Installing a large motor always involves some physical risk. If you discover the shaft is bent only after you have installed the motor, you must incur the risks to remove it and install the replacement. Turn the shaft by hand before setting the motor in place. Though the most likely damage during shipping is a bent shaft, also test the windings with an insulation resistance tester before installing the motor.
- Trying to muscle a motor into place. Use a prybar, so you protect your shoulders, back, and fingers.
- Lifting a motor with muscle, rather than with proper equipment. Yes, two brawny electricians can lift a 300 lb motor. But what if one of you slips? Or the load suddenly shifts? What if getting that motor in place requires bending over and using your back to support the load?
- Reaching under a suspended motor to clean where the feet go. Sure, it takes only a second. But that's all it takes to lose your fingers, too.
- Not verifying the connections. It takes little time to recheck the connections.
- Tagging, but not locking out, the disconnect to make it easier to do rotation testing and remake the connections if needed. Don't violate lockout/tagout to save a trip or two to the disconnect. It's in line of sight, so the little time you save doesn't justify the risk.
- Operating a disconnect with your right hand. Stand to the right of it and operate it with your left hand, so you are not in the path of an arc blast.
- Bumping a motor without permission from operations. The process implications of that bump could injure another person or initiate an undesired chain of events.

Review and discussion

1. What are some of the hazards and potential injuries associated with installing motors?
2. What should you do before transporting a motor, to prevent slipping hazards?

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