

Toolbox Talks 2

033: Working Safely On De-energized Equipment

Discussion leader duties for this session:

Think of equipment that has energy sources other than the breaker for the power leads.

What this Safety Talk covers:

Safety precautions against energy sources other than the supply breaker.

Discussion notes:

Background

When you open a breaker and then verify the power has been interrupted to the circuit you are about to work on, that doesn't mean you have isolated all energy sources.

Other energy sources

- Capacitors, batteries, mechanical springs, pneumatic circuits, gas cylinders, hydraulic cylinders, inertia devices (e.g., flywheels), and gravity feed devices can all store and release energy after you have opened the supply breaker. Some energy storage methods can store energy for years, not just minutes. Pre-startup conditions may include undocumented energy sources.
- Control circuits, undocumented cross-wiring, inadvertent backfeeds, and voltage induction can present lethal shock hazards.
- Very seldom does anyone open all circuits in a panel to perform work on one circuit. This means you are very likely to work adjacent to an energized circuit. Your tools, legs, arms, and torso are all potential conductors.

De-energized circuit best practices

- Don't look only at the electrical drawings when de-energizing equipment. Understand the basic processes of the equipment and obtain all drawings and information that will disclose all sources of energy.
- Walk through the work procedures to determine where helpers will be needed to pass tools and parts back and forth, and to maintain strict housekeeping.
- If you don't know how to isolate and lock open a given energy source, don't guess. A wrong guess can easily prove fatal. Ask your foreman to help you find a person who is qualified in isolating those sources.
- Determine what energized circuits are in your work area. Then, determine possible touch hazards and take the necessary precautions against them. This will include such things as using blankets and other barriers, wearing insulating PPE, and modifying work procedures.
- Guard against "drop accidents." For example, you may be working on a de-energized circuit in a cabinet that has energized bars. Dropping a wrench that shorts a phase conductor to the cabinet wall will produce a disaster.
- Practice good housekeeping at all times. If you're not using a tool, put it back in the pouch (or other holder) rather than set it down. Remove old parts from the work area as soon as they are removed from the equipment.
- Don't be there, unless you *have* to be there. Unintentional energy releases do happen on "de-energized" equipment.

Review and discussion

1. What are some energy sources other than the supply breaker?

- Participant's Signature and Date***

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