

Toolbox Talks 2

069: Unsafe Conditions: Cable Pulling

Discussion leader duties for this session:

Either observe a cable pull in progress or mentally walk through one you've seen before. Make notes of the hazards that could exist.

What this Safety Talk covers:

This Safety Talk addresses unsafe conditions that can exist during cable pulls.

Discussion notes:

Background

Cable pulling is one of the safest activities in electrical construction. And therein lies the danger. It is all too easy to relax your safety vigilance and overlook the dangers.

Unsafe conditions around cable pulls

- Grounding and bonding errors. In a properly grounded and bonded system, all metallic objects are at the same potential. However, grounding and bonding errors are common. You may be exposed to a shock hazard, even if the supply switches and breakers are open. It's nearly impossible to avoid touching metallic objects such as raceways and enclosures during a pull. So, check the grounding and bonding as part of setting up for the cable pull.
- Cable spools not properly secured. Check your spool setup to ensure the spools can spin freely without coming off the rig they're mounted on.
- Slipping hazards from cable lube. The same slipperiness that causes you to use a lubricant in the first place can also create slipping hazards in your work area. The solution consists of providing adequate lighting so people can spot any stray lubrication, paying attention when adding lubrication, and cleaning up stray lubricant as you go.
- Slipping hazards from other sources. Nearby equipment, lift trucks, and other crews can leave slipping hazards in your area. Check for wet spots as part of your cable pull setup.
- Slipping hazards on outdoor surfaces. The gravel beds commonly in place for drainage around outdoor electrical equipment do not provide good footing. There isn't much you can do about this, other than be aware of the slipping hazard.
- Soft tissue injury hazards due to improper lubrication, awkward cable entry angle, cable feed problems, and other issues related to cable pulling methods. When setting up the cable pull, try to make it as mechanically smooth as possible. Sometimes, a minor adjustment produces a major improvement.
- Violations of safety practices for temporary power and light. This is a separate safety topic, but it is one that frequently arises with cable pulls. At a minimum, make sure all wiring has adequate protection and any generators have adequate ventilation.

Review and discussion

1. The typical cable pull is inherently safer than many other activities in electrical work. What problem can arise from this fact?

2. Can you get shocked by touching the raceway through which you're pulling cable? Why? *[Note to Presenter: Yes. It's a common misconception that raceway is "grounded" and therefore never a shock hazard. If a raceway is properly bonded, then part of the problem is solved. The other part of the problem is you may touch an enclosure or raceway that isn't properly bonded, at the same time you touch the first race-*

way. If any two metallic objects are at different potentials and you touch them at the same time, current will flow through you.]

3. Why does having adequate light reduce your chances of injury?

4. What can happen if a cable spool comes off your feed apparatus? *[Note to Presenter: If that is a spool of 400 MCM cable, the danger is obvious. With large cable spools, there's a tendency to use a hefty and secure means of mounting the spools. But with smaller spools, there doesn't "seem" to be much danger. It's common to slap three spools of #10 onto a stick of EMT and suspend that between a couple of large spools. People do this with no injury, all the time. The problem is that sometimes, people get injured because of this. A spool rolls up behind someone, who then trips backward over it. Or wire that wasn't a tripping hazard forms a loop that is a tripping hazard. It is safer and more efficient to use equipment made for feeding wire from small spools, than to "rig up" something. That's the first part of the solution. The next part is to use the provided locking mechanisms.]*

5. How can you reduce slipping hazards from stray cable lube?

6. What are some possible sources of slipping hazards, and what can you do about them?

7. What are some possible slipping hazards on outdoor pulls, and what can you do about them?

8. Regarding the mechanics of the cable pull, how can you reduce the chances of injury?

9. Why do you have to consider temporary power and light safety issues when planning a pull?

10. What are some good general rules for safety in cable pulling? *[Note to Presenter: There's no "best" answer here. The purpose of this question is to get people to mention a few different things that will help them do cable pulls safely.]*

Participant's Signature and Date

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