

Toolbox Talks 2

049: Unsafe Acts: Arc and Blast Hazards

Discussion leader duties for this session:

Review your company's arc fault and arc blast protection policies.

What this Safety Talk covers:

Acts that can expose you to a lethal arc blast.

Discussion notes:

Cautions

- Read any arc blast warning placards posted in the area. Use the recommended PPE.
- The location may not have the arc blast PPE requirements posted. This doesn't mean they don't apply. Find out what they are, and review them with your foreman.

Acts that can leave you burned

- Working without a plan. Use a scripted work plan and/or checklist. If no such plan or checklist exists, create one before starting the actual work. It's the surest way to avoid making lethal mistakes.
- Using the wrong PPE. First, determine what PPE is needed for the energy level present. This has nothing to do with what you're *doing*. It's based on where you *are*. You must be wearing the required PPE if you're going to be in front of that equipment. If you open any covers, the PPE requirements increase.
- Working with the wrong tools. The correct tools should already be identified in your work plan. Obtain them before starting the work. Don't use electrical tape to "make" insulated tools or to "upgrade" the insulation on existing tools.
- Doing work you're not qualified to do. Being unqualified for a specific task has nothing to do with your overall competence. But it can have everything to do with your safety and that of your coworkers. Review the work plan, and make sure you are qualified in the specific work being done on that specific equipment. If you're not, discuss this with your foreman.
- Proceeding without a system review. You need to understand the operational sequences and what happens if you operate the breakers or switches involved in this particular job.
- Bypassing interlocks, shutters, or other devices designed to prevent misoperation or to protect people. If these safety devices aren't allowing your work to proceed, get an engineering analysis to determine a safe way to move forward. Don't just defeat the safety mechanisms as though that's a smart way to work. It's not.
- Working without a partner. Don't work on energized equipment alone. Your partner can cross-check the scripted work plan and review conditions with you.
- Removing covers unnecessarily. Open only what you need to open, and secure panels, doors, or covers as soon as you no longer need access. This will help protect you from the blast force, shrapnel, and molten metal that an arc blast may produce.
- Working with outdated drawings. Don't work with drawings that you can't confirm are current.
- Working when fatigued. Mistakes happen when you're tired or distracted.

Review and discussion

1. Why do you need a work plan before working on energized equipment?
2. How do you determine what PPE you need?
3. Why is it important to identify and obtain the correct tools before you start the job? *[Note to presenter: The natural tendency when you're in the middle of a job and find you don't have the right tool is to "make do" with the wrong one. This can be a fatal error.]*
4. What's a qualified worker? *[Note to presenter: The word "qualified" has a specific meaning under OSHA regulations. Basically, there are two elements to it. The first is that you have the training for a specific task or equipment. The second is that you have the authorization to perform that task. A classic example is lift truck operation. A person may be trained to operate a certain model of lift truck, but doesn't have permission from the owner. In energized work, the consequences of being unqualified are greatly magnified. And the requirements can be very equipment-specific. Don't assume you're qualified. Review the task, procedures, and equipment information before determining this. Don't assume you're qualified just because your foreman assigned you the task. That satisfies only the second requirement of being qualified.]*
5. Why do you need a system review? What might this involve?
6. If an interlock is keeping you from completing your work, why can't you just bypass it? Even if you're "sure" that's OK? *[Note to presenter: Bypassing an interlock is an engineering decision, and making it requires an engineering review and several sign-offs. It requires providing an alternate way of accomplishing the same thing, not merely removing the interlock. It may not be possible, and a shutdown or partial shutdown may be required.]*
7. What should two partners do, in relation to the work plan and conditions?
8. Why should you replace covers as you go, if you no longer need access? What's wrong with waiting until the job is done to start putting covers back on?
9. What's the problem with using drawings that may be outdated?
10. What's dangerous about working when you're so tired that your mind is wandering? If you find yourself in that condition, what should you do? *[Note to presenter: The typical hard-working electrician has a hard time with this one. Nobody wants to be seen as a slacker. But do you really want to be the person who blew up the facility? Your best bet may be to see if there's something else you can do for the day. This may carry some job security risk, especially for people who have attendance issues or are in some other way "on the list." But think of the alternative. Having 90% of your skin burned to charcoal isn't a winning strategy. One technique that often works is taking a walk and getting some coffee. But don't assume that doing this always clears up your head sufficiently. Use good judgment.]*

Participant's Signature and Date
