

Mentoring: Guiding an apprentice through training

Technology at Work



A recent article in *Electrical Contractor* magazine estimated that the industry is set to lose as much as one-sixth of its experienced hands by the end of this decade. Skilled field electricians can play a vital role in producing the next generation of journeymen by providing much-needed guidance to co-workers still in their apprentice period. Taking your mentoring responsibilities seriously can go a long way toward helping apprentices translate the theory they are learning in the classroom into practical knowledge on the job site.

Joe Peters, an instructor with the Northwest Washington Electrical Joint Apprenticeship Training Committee, offers the following advice to those responsible for training apprentices:

- Stress safety first, last and always. As a seasoned professional, working safely is second nature for you. But that's not always the case for the apprentices on your crew. Making sure that apprentices understand the hazards specific to the job site, the system, and the task at hand can help ensure that they avoid mistakes that could compromise their safety and that of the entire crew.
- Lead by example. It's tempting to cut corners when you have the expertise to do so safely, but remember that the inexperienced crew members watching you handle a job don't have your level of know-how. For them, taking shortcuts can be a recipe for disaster. If you "walk the walk," there's little chance that apprentices will get the idea that it's okay to compromise when it comes to safety.
- Don't make assumptions about the apprentice's level of knowledge or experience. Before allowing any apprentice to work unsupervised at any task, explain the process in detail to the apprentice so he understands in advance everything that is going to happen. Then walk through the process, explaining each step as you go. Finally, review the procedure, answer any questions, and ask the apprentice to perform the activity as you watch. Repetition is key. Expert speakers say that the best way to get a point across is to "Tell them what you're going to tell them; then tell them; then tell them what you've told them."
- Brush up on proper DMM, clamp meter and basic tester usage and teach your apprentice to use the right tool for the job. Apprentices are often unfamiliar with the equipment used on a job site, or confused about what instrument is the best fit for a specific task. For example, when making complicated ac signal measurements, a true-rms (root mean square) meter is a better choice than a conventional averaging meter, which can give readings that may be off by as much as 50 percent on short-pulse distorted waveforms. Or using a specialized tool like a power quality analyzer that enables you to see transients and noise is a good option when troubleshooting a power quality issue.

- Emphasize that “you get what you pay for” when it comes to equipment. Apprentices should be taught the importance of using quality instrumentation that meets the highest safety standards, and trained to know the limitations of the equipment they are working with. Use instruments that are well maintained and calibrated to the manufacturer’s recommended standards. Make sure that the instrument is rated properly to perform the job at hand and has safety features such as overcurrent protection and high-quality test leads.
- Don’t overlook the obvious, such as reminding apprentices to work on equipment in a non-energized state and to verify that they follow lock-out/tag-out procedures, per OSHA requirements. As an experienced electrician, you know certain situations require you to work “hot,” but it’s wise to caution your apprentices that this is the exception to the rule.

How can you be sure a system is de-energized? Show apprentices how to verify that test instruments are working properly by checking to see if voltage is present on a known live circuit before using the tool on an unknown circuit. Then ask the apprentice to check it again on the known live circuit to minimize the possibility of getting a false zero-volt reading.

Take every opportunity to pass on to apprentices the knowledge you’ve gained over your career. Though it might seem tedious or time-consuming on occasion, making the effort to work closely with apprentices can pay big dividends. Your guidance is key in turning out qualified professionals that understand the hazards involved in the job and how to avoid them.

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