

Feature

Proper PPE – A Journey with No End

One Company's Experiences

Forty-two years ago, when starting my apprenticeship in an IBEW shop in the Los Angeles area, there was no PPE at the shop. One exception was a very old, heavily scratched face shield. It was sometimes found in the vicinity of the grinding wheel. When the grinding produced a large enough quantity of sparks to prevent work from being done, the shield was used. For small delicate work, the face shield was left where it lay, as it could not be seen through.

In four years of working in that shop, there were no safety meetings and no formal safety training. As I recall, no safety training was offered at Los Angeles Trade Technical College where the apprenticeship classes were held. Safety was taught "on the job," where one of the senior journeyman explained how to tell the difference between 120 and 480 volts. This was performed using two fingers of *one hand only*. We were reminded of the importance of not using fingers of different hands as this could lead to a bad consequence, such as death. The difference in voltages could be distinguished by the tingling in your hand. The more tingling you felt, the higher the voltage. For those readers not up to date on recent advances in safety, this method is no longer acceptable.

Going to work for the Los Angeles Department of Water and Power produced structured safety training. There were monthly safety meetings.

The majority of the work was medium and high voltage with the associated higher risks. One training topic was resuscitation. It was not called CPR at the time. This proved valuable as within a short time I was provided an opportunity to assist a child using the rescue breathing technique recently taught.



by Tony Demaria
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The results of both job experiences, however, appeared to be approximately the same at work. There was an endless stream of cuts, bruises, and strains. Broken bones and fatalities were part of the mix. One hydroelectric construction project I worked on had one fatality a year for three years with no change in safety practices or management concerns. This was all accepted without question as part of working in a dangerous environment.

In the 70's we began to hear this dreaded word — **OSHA**. These guys were going to screw up everything. How could one possibly perform a job with a lot of rules to confuse everybody? Even worse, wearing a bunch of stuff like safety belts and gloves for easy tasks would only slow down the work.

Two incidents that occurred very close to me changed my attitude. One involved a coworker falling from approximately 20 feet onto some protruding steel. He almost bled to death in my arms. Only luck and a close hospital saved his life. In the other incident, the electrician was not as fortunate and it ended in a fatality.

When starting an electrical contracting business 30 years ago, safety was not the first thing on my mind. Getting the job done and making money were the priorities. This soon changed as the enormity of the situation became apparent. I faced a huge responsibility for the safety of the electricians performing the work.

What could I do to ensure that all personnel went home every night with all body parts working correctly, and, most importantly, **alive**! Working safe involves several elements — PPE is only one. The first step is always to insure the safest working environment possible. If the equipment being worked on is energized, the first choice is to turn it off. If the floor is slippery with oil, the number one thought should be to clean the floor, not "be careful of your surroundings."

This short article is not an overview of safety. The focus is PPE and how far we have come in a few short years. Most importantly, what can we do now? The two incidents I referred to above would never have happened had better safe practices been in place. However, had PPE been utilized (a safety harness and voltage-rated gloves) when bad things happened and mistakes made, no one would have been hurt.

Here lies one danger of PPE. It has been and can be used as the first line of safety. Do not fall into this trap. Another danger of PPE is once it is put on, the electrician may get a feeling of invulnerability. Wearing all this gear, you can feel like Superman. You are not stronger and may even have reduced awareness such as limited vision with a flash hood on. This is a complex subject and sometimes offers confusing options as to what is the **best** choice.

Meeting the Challenge of PPE Safety

1. How can employers and employees understand and conform to the frequently changing laws, standards, regulations and customer rules on PPE?
 - Attend conferences, especially the IEEE PCIC/ IAS Electrical Safety Workshop that has many sessions specifically on PPE.
 - Read a book! There are currently several excellent new safety books listing appropriate PPE. Check the NFPA and IEEE on-line bookstores.

- Go to special safety training schools. Offers frequently come in the mail and can be found on-line. Schools vary from one day to two weeks.
 - Hire a consultant who is knowledgeable on PPE. An expert from outside the company may offer unique expertise and insights.
2. Exactly what PPE should be purchased with a limited budget to get the best product available at that time?
 - Talk with the manufacturers of PPE and invite them to your shop to demonstrate their equipment. This is free and carries no obligation.
 - Purchase several different types and distribute them to employees to test, evaluate, and report back their findings.
 - Call other companies using similar PPE and ask their opinion. A network of like-minded organizations can provide valuable information.
 3. How does a company involve all field personnel in the creation and implementation of the policies on PPE?
 - At your weekly safety meeting, allow specific time to review what PPE is being used and feedback as to what worked best or what problems were encountered.
 - Form a specific safety committee to examine one product item, such as arc flash protection, and allow them time for a thorough evaluation.
 - Rotate committees frequently to make sure all field personnel have the opportunity to participate.

The responsibility of every company is to insure that the best PPE currently manufactured is available to its field personnel. However, it does not end here. The problem is making sure the PPE is used! Involving all employees in the process is the best way to succeed in meeting this challenge.

The experiences at our company have not always been positive. There have been hurt feelings, angry words, and wasted money on bad equipment. Management gets frustrated when PPE is underutilized, and everyone gets overwhelmed by all the unending changes. But here is the good news. The workers compensation modification rate earned by our company is the lowest possible, saving tens of thousands of dollars per year. Why? Because we work much safer than in earlier years. Accidents have decreased radically.

The best news is deeper. We do not wear PPE to save money on insurance or because some rule says we must. PPE is bought, cared for, and worn because it is the right thing to do. We really care and look out for each other. A new culture is building that tells us safety is a moral decision. It's a good way to go to work.

All this is a never-ending, on-going process to be repeated over and over. Remember, having and using the proper PPE is a journey, not a destination! 🌐

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