



# Safety Measures<sup>ELECTRICAL</sup>

**“Elimination is the first priority!**  
Ensure a risk assessment is completed before energized work tasks are completed.”

## Knowledge Is Power: IEEE Electrical Safety Workshop 2025

**By Terry Becker, P.Eng., CEMCP, IEEE Senior Member**

I have attended the IEEE Industrial Application Society (IAS), Electrical Safety Workshop (ESW, <https://electrical-safetyworkshop.org/>) for 20 years. This year it was held in Jacksonville, Florida from March 5-8, 2025. When I started my electrical safety journey in 2005, I became aware of the IEEE ESW and attended my first conference in Denver, CO in 2005. It became a catalyst for my passion in electrical safety. It is the only conference that I am aware of organized by an organization such as the IEEE that is devoted to electrical safety, and with the format that it utilizes. I presented my first paper at the 2007 IEEE ESW in Calgary, Alberta on the Electrical Safety Program I was developing for EnCana

Corporation. Globally I have presented on electrical safety at over ninety-five (95) conferences or workshops in the USA, Australia, New Zealand, Italy and India.

The IEEE ESW conference starts on Monday with electrical safety related Standards development Technical Committee meetings (e.g., IEEE 1584, IEEE 1814), Tuesday morning is always Tutorials, and the Technical Papers start at noon on Tuesday. There is only a single track, so you never miss a presentation.

Wednesday includes papers in the morning and then an electrical safety focussed exhibition in the afternoon – one-stop shopping for the latest in electrical equipment technology,

arc flash & shock PPE, tools & equipment, consulting services, and associations related to electrical safety and electrical equipment maintenance (e.g. ESFi, NETA, etc.). Additionally, in the evening, there are Electrical Engineering Student poster presentations.

Thursday is a full day of technical presentations – a busy day, yes, but an amazing opportunity to learn, benchmark, network, and ask questions.

Friday AM, technical papers continue and the conference officially ends at noon. Friday PM offers another opportunity for tutorials.

All of this is scheduled with an amazing amount of time to network, catch up with attendees, meet new friends and get caught up with old friends. Networking alone at the IEEE ESW is unbelievable!

In terms of Canadian attendance, we typically see at least 50 participants each year – often more – but we need this number to grow! Many Canadian presenters are featured annually. I had the opportunity to present this year, with my paper titled “*Is the Relay Programmed?*”

### Here Are Some Highlights From the 2025 Conference

I attended a tutorial related to Electrical Safety Basics on Tuesday morning. I attended because this year, Lanny Floyd was one of the presenters. I first heard Lanny present on the need for an employer to have an Electrical Safety Program in 2005 and since then he has been an inspiration to me on my mission to develop and implement compliant Electrical Safety Programs will employers.

Technical papers covered a broad scope of subject content as they do every year. There were more papers this year than in the past related to DC batteries and specifically EVs. Here are some of the papers that were presented:

1. Temporary power and electrical safety.
2. “Avoid Contact” the shock protection boundary without a distance.
3. Transient DC arc flash incident energy calculation for DC distribution systems.
4. Lithium-ion propulsion battery occupational safety.
5. Best practices for contractor evaluation. Failure to plan is a plan to fail.
6. In the relay programmed?
7. How artificial intelligence can help improve arc flash predictive models.
8. Advancing the electrical safety culture to the commercial and residential worker.
9. Overlooked dangers, addressing electrical safety for non-electrical workers.
10. Practical battery arc flash models.
11. Workplace electrical fatalities, 2011 to 2023.
12. Best practices for implementation of temporary protective ground on electrical systems.
13. It is time to move the needle in electrical safety.
14. Have we solved the arc flash problem.
15. Practical application of the energized electrical work permit process.
16. A comparison of fabric arc ratings and the performance of arc-rated clothing exposed to arc flashes generated using AC and DC energy sources.

17. Electric vehicles and LI-ion batteries manufacturing, what are the risks to workers?
18. An AI integrated robotic system for safe operation in high voltage distribution panels.
19. How to be an employer in charge for a high voltage tasks.

I attended a tutorial on providing compliant Electrical Safety Training on Friday afternoon. This was a good benchmarking opportunity for the arc flash and electric shock training that I have developed and delivered.

I wish I could truly communicate to you the benefits of attending this conference. I attend it for many reasons, several that I listed above, but also to maintain my electrical safety subject matter expertise, recharge my passion for electrical safety and benchmarking what I know and share with industry in Canada, the USA and Internationally. I would encourage you to attend. If you have any questions do not hesitate to contact me to discuss.

This year at the IEEE ESW I was totally surprised that Dr. John Wade and I received honourable mention for Best Paper from the 2024 Conference, “Arc Flash In Single Phase Power Distribution.”

*See you in Round Rock Texas in 2026!*

A second conference I attend every year is the NETA PowerTest Conference which was held in Orlando, Florida, March 10-13, 2025. I have attended the NETA PowerTest Conference for over ten (10) years. This conference is the only conference I am aware that provides a venue to learn everything and all things related to electrical equipment maintenance.

There are multiple presentation tracks, expert panel sessions and vendor technical training session. I present in the Electrical Safety Track and also sit as a Panelist on the Electrical Safety Panel.

I will continue my efforts to communicate information in Electrical Safety Measures and share the knowledge and experience I have in an effort to “Get it Right!!” Knowledge is power! TAKE CONTROL of ARC FLASH! PLACE MORE FOCUS on ELECTRIC SHOCK!



**Terry Becker**, PEng., CESC, IEEE Senior Member is a founding member and the First Past Vice-Chair of the CSA Z462 Workplace electrical safety Standard Technical Committee and currently a Voting Member and Clause 4.1 and Annexes Working Group Leader. Terry is also a Founding Member and a Voting Member on the

CSA Z463 Maintenance of electrical systems Standard and a Voting Member of the IEEE 1584 Guide for Performing for Arc-Flash Hazard Calculations. Terry has presented at Conferences and Workshops on electrical safety in Canada, the USA, India, Australia and Italy. Terry is a Professional Engineer in the Provinces of BC, AB and ON. Terry is an Electrical Safety Specialist, Management Consultant, and can be reached at 587.433.3777 or by email [terry.becker@twbesc.ca](mailto:terry.becker@twbesc.ca).