ELECTRICAL Safety Measures

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

Knowledge Is Power: IEEE Electrical Safety Workshop 2026

By Terry Becker, P.Eng., CESCP, IEEE Senior Member

I have attended the IEEE Industrial Application Society (IAS), Electrical Safety Workshop (ESW), https://electrical-safetyworkshop.org/) for 21 years. This year it was held in Round Rock, Texas from March 9-13, 2026. 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 independently 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 Canada, 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, Others) and IEEE IAS ESW Committee and Sub-Committee meetings, 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 (e.g., safety by design), power system software vendors, 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. Thursday evening also include Poster Session paper presentations.

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.

Here Are Some Highlights From the 2026 Conference

On Tuesday morning I attended an information session related to the development of incident energy and arc flash boundary calculation formulas for 800VDC power distribution, which is evolving for AI data centres. This initiative has been led by NVIDIA (see information: https://www.nvidia.com/en-us/data-center/technologies/800-vdc-architecture/). This was an amazing opportunity to see first-hand out how technology driven changes, change the amount of power required and power distribution delivery architecture into a new DC power distribution required. The technical papers started Tuesday after lunch and covered a broad scope of subject content as they do every year. Here are some of the papers that were presented:

1. The Hazards of Brushed Excitation Systems.
2. Experience with Fault Currents on Photovoltaic Arrays.
3. Reducing the Risks of Shock and Arc Flash Dangers: Addressing Age, Debris, and Environmental Factors in Electrical Systems.
4. One More Thing – Fatality and a Life Changing Injury: A Lesson in "A Lens of Systems Safety."
5. Laboratory Tests for Validation of Transient DC Arc Flash Incident Energy Calculation Methods.
6. Arc Flash from Flood Damaged Circuit Breaker.
7. Are Your Arc-Rated Garments Safe? Comprehensive Testing of Garments to Evaluate Performance.
8. Electrical Safety in the Workplace: 14 Years of Electrical Safety Trends.
9. They Didn't See the Wire: Preventing Tragedy Through Awareness and Innovation in Powerline Safety.
10. From Luck to Leadership: Why Zero Incidents May Be the Greatest Risk.
11. Electrical Safety Best Practices for Data Center Commissioning.
12. Importance of Using Voltage-Rated Gloves with Leather Protectors.
13. Neutrals Can Kill.
14. Case of a Steel Ruler.
15. Doing More with Less: NFPA 70B, AI and Maintenance Efficiency.
16. Using Condition-Based Maintenance to Ensure Safety, Reliability, and NFPA 70B Compliance.
17. Five Frustrating EV "Safety" Practices.
18. High Voltage (HV) Electric Vehicle (EV) Prototype Arc Event During Battery Discharge – Lessons from HV EV Safety Controls & Change Management.
19. Is Temporary Power the Weak Link Within Your Electrical Safety Program?
20. A Review of Serious and Fatal Arc Flash Incidents.
21. Factors Affecting "Likelihood" in Risk Assessments for Electrical Work.
22. Enhancing EV Electrical Safety Using Digital Work Instructions.
23. Overview of Brazilian Residential Electrical Installations: Risks, Deficiencies, and Proposed Actions.
24. Work Conducted at Height, Electrical Hazards and Falls.
25. Electrical Safety, Arc Flash and Mexican Standards.

On Friday morning I attended a tutorial on Electrical Maintenance Program Development using the new 2023/2026 Edition of NFPA 70B Standard on Electrical Equipment Maintenance. This was a good benchmarking opportunity for the Electrical Maintenance Program documentation system TWBESC is developing to add to our licensed Electrical Safety Program offering applying CSA Z463 Maintenance of electrical equipment Standard and NFPA 70B.

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.

A second conference I attend every year is the NETA PowerTest Conference which was held in Nashville, Tennessee, March 2-6, 2026. I have attended this conference for over ten years and is the only conference I am aware of 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 may 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!!" My electrical safety journey and mission will continue. Knowledge is power! TAKE CONTROL of ABNORMAL ARCING FAULT/ARC FLASH! PLACE MORE FOCUS on ELECTRIC SHOCK!

Terry Becker, P.Eng., CESCP, 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 is also a voting member of the CAN/ULC S801 Workplace Electrical Safety Standard for Utility Generation, Transmission and Distribution. Terry has presented at over 95 Conferences and Workshops on electrical safety in Canada, USA, India, Australia and New Zealand. 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**.