



Safety Measures ^{ELECTRICAL}

“All electrical incidents are preventable! Keep employees safe with an up to date Electrical Safety Program and appropriate training.”

CSA Z462-2018: 4th Edition Change Management

By Terry Becker, P.Eng.

We are quickly approaching January 2018 and the 4th Edition of the CSA Z462 Workplace electrical safety Standard will publish. This is good news for Canada as we continue to evolve in our identification and management of the electrical hazards of arc flash and shock. But, we need to ensure we are “Getting it Right”, and there is a lot of work yet to be done.

Managing change is critical to any business. The application of the CSA

Z462 Workplace electrical safety Standard has changed, is changing, and will continue to change how energized electrical work tasks are implemented. De-energizing electrical equipment before any repair and alteration is now a priority. Implementing the use of an Energized Electrical Work Permit (EEWP) will ensure that documenting the justification for certain work tasks and authorizing them to be performed is a formal process that is part of your Electrical

Safety Program’s requirements.

Since it was first published and available in January 2009, the CSA Z462 Workplace electrical safety Standard has made a significant impact in mitigating exposure and/or reducing the risk of exposure to the electrical hazards of arc flash and shock to all workers at a workplace. Its correct application will benefit industry and worker safety.

That said, there has also been misinformation or conservative interpretation

of the information presented that is related to the understanding of arc flash and shock hazards, when workers are actually exposed, and what you and the workers need to do. Training received may have only been awareness training, may have inadvertently used fear tactics with the workers, or did not provide any training on how to implement a Risk Assessment Procedure. CSA Z462's requirements may not have been communicated correctly in the training. Workers may have been incorrectly instructed with respect to arcing fault probability related to "Normal Operation" of energized electrical equipment.

An arc flash incident energy calculation greater than 40 cal/cm² has wrongly been communicated as "Dangerous" and "No PPE Available" in engineering arc flash incident energy analysis reports. Those same engineering reports also recommend arc flash PPE based on a hazard/risk category (HRC) number when there is no direct correlation between an incident energy calculation and assigning arc-rated PPE by an HRC number. When incident energy has been calculated, arc-rated PPE is specified with an Arc Thermal Performance Value (ATPV) equal to or greater than the incident energy listed on an arc flash and shock equipment label. Equipment labels installed for arc flash and shock may not be compliant and may not correctly communicate information.

Change is positive if it is managed



properly. With respect to electrical safety, a plan should be developed, a schedule determined, and appropriate staff (e.g. management, supervision, HSE, Qualified Electrical Workers, Qualified Operation Workers, and Non-Electrical Workers) or contractors responsible for reviewing information, discussing it, and ensuring it is understood correctly and reasonably interpreted with substantiation, should be involved. Management of change practices would dictate that a formal structured approach is followed.

As we move to the 4th Edition of CSA Z462, it is an opportunity for you and your company to step back from what you have done to date with respect to arc flash and shock and audit it or complete a gap analysis. Using a structured approach, your Electrical Safety Program should have an Internal Electrical Safety Audit process. Measure

your performance to date, identify deficiencies in your policies and practices and the preventive and protective controls you have applied to date, and implement corrective actions.

A continuous improvement process should be adopted. You need to ensure your implemented policies and practices are current to the latest Edition of the CSA Z462 Workplace electrical safety Standard, as the 2018 4th Edition will bring with it additional updates and changes from the 2015 3rd Edition. You need to update your company's Electrical Safety Program and implement the related changes it requires to ensure your company follows electrical safety industry best practices to mitigate exposure to the hazards of arc flash and shock and keep your workers safe.

Please submit any questions or comments you may have to Kevin Buhr and myself at kevinb@electricalline.com and tbecker@danatec.com.



Donate your excess product; it's EASY, GREEN, and GOOD for your bottom line.



Contact Stephanie Ashton-Smith at sashtonsmith@habitat.ca or 647-825-3958 to provide a solution for your inventory

Terry Becker, P.Eng., CEM, IEEE Senior Member is the first past Vice-Chair of the CSA Z462 Workplace electrical safety Standard and currently a Voting Member and Working Group 8 Leader, Annexes. Terry is also a Voting Member on the IEEE 1584 Technical Committee and an Associate Member of the CSA Z463 Guideline on maintenance of electrical systems. Terry is a Professional Engineer in the Provinces of BC, AB, SK and ON. Terry is the Senior Vice President, Electrical Safety Division, at Danatec Educational Services Ltd., a training, products and consulting company with an Electrical Safety Division specializing in electrical safety consulting, licensed products and training solutions. www.esps.ca / www.danatec.com