Safety Measures ELECTRICAL

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

By Terry Becker, P.Eng

It has been a while since the last supplement and articles. The CSA Z462 Workplace Electrical Safety Standard has also been published in its 3rd Edition with significant changes. The last Electrical Safety Measures actually published when the 2nd Edition of CSA Z462 published, 3 years ago. With the 3rd Edition of CSA Z462 comes significant changes in the content and approach. Have you updated your Electrical Safety Program and implemented the changes and related practices for energized electrical work?

As well the CSA Z463 Guideline on maintenance of electrical systems did get published in 2014. This was a significant milestone for Canada. With the 3rd Edition of CSA Z462 and the new Risk Assessment Procedure (RAP) it places focus on the "Condition" of energized electrical equipment, "the equipment is properly maintained?" If you have been using the new Arc Flash PPE Category "Table Method" you will know that the new Table 4A uses equipment condition when deciding if "Arc Flash PPE is required." More on this in future articles.

What I would like to do is ensure that the Electrical Safety Measures provides the information you need about CSA Z462, and how it is being used in industry and how is should be used or applied.

With the 3rd Edition of CSA Z462 a documented Risk Assessment Procedure (RAP) is now required for all energized electrical work tasks. I am concerned that this process is not understood or that communication in

available training has completely avoided it, putting focus only on Arc Flash & Shock Risk Assessments which are components of the overall Risk Assessment Procedure (RAP). The new CSA Z462 Clause is quoted:

4.1.5.7 Risk assessment procedure

The electrical safety program shall include a risk assessment procedure that addresses worker exposure to electrical hazards. The procedure shall identify the process to be used by the worker before work is started to carry out the following;

(a) Identify hazards;
(b) Assess risks; and
(c) Implement risk control according to the hierarchy of methods.

Notes:

(1) The hierarchy of risk control methods identified in CSA Z1002 is as follows:
(a) eliminating the hazard;
(b) substituting other materials, processes, or equipment;
(c) engineering controls;
(d) systems that increase awareness of potential hazards;
(e) administrative controls, e.g., training and procedures, instructions, and scheduling; and
(f) PPE, including measures ot ensure its appropriate selection, use and maintenance.

So, what I would like to do is get your questions and look to providing answers. I would also like to report on what I have experienced as I continue to work with industry across Canada in getting CSA Z462 applied in the field. Some of the issues I can list and would like to prioritize getting information out on relates to the Hierarchy of Controls that are applied to reduce risk to an acceptable level as listed above in the Notes to Clause 4.1.5.7.

Recently I have come across detailed Arc Flash & Shock "Danger" equipment labels. The information presented is not correct and would in fact expose the employer to OH&S risk. This issue relates to the P.Eng. Stamped Engineering Incident Energy Analysis Studies and what I call the "40 cal/cm^2 myth." More on this in a future article.

Some of the other topics I would like to provide information and comments on: LOTO, benefits of Substitution and short and long term planning related to upgrading power distribution equipment, as above requirements for Engineering Incident Energy Analysis Studies (ensuring the employer and owner of the power distribution equipment takes control of scope, confirming assumptions made, report content, and specification for detailed equipment labeling), operating electrical equipment vs. performing maintenance, "Working On" electrical equipment, Arc Flash & Shock Risk Assessments, using the Arc Flash PPE Category "Table Method," the application of the EEWP (which is still not understood), training options and validation of competency, and need for Electrical Safety Work Procedures.

There are still issues with Electrical Specific PPE, Tools & Equipment performance as well.

So, WELCOME BACK! Please submit any questions or comments you may have to Kevin Buhr and myself via email, kevinb@electricalline.com and terry.becker@esps.ca.

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