

New Company ESPS Electrical Safety Program Solutions INC. launches services in Canada



We would like to use the first article, of this inaugural First Edition of the **ESPS buzz** to officially welcome two new members to the ESPS Team, **Mike Doherty** and **Dr. Prodipto Ghosh**.

ESPS is honored to announce the appointment of **Mike as President, Senior Management Consultant**. Mike joins ESPS following a very successful career with Ontario Power Generation (OPG), where Mike was most recently Electrical Safety Program Coordinator at the Darlington Nuclear Power Plant. We want to commend Mike for the amazing contribution he has made to electrical safety at OPG, with the IEEE (in many capacities, i.e. IEEE Electrical Safety Workshop, IEEE Electrical Safety Forum, IEEE Standards Committee work, etc..) with CSA (currently Chair), CSA Z462 Workplace Electrical Safety Standard, NFPA, and on and off the job. Mike has devoted himself to making a difference in electrical safety and will continue this effort with ESPS. Mike can be reached at mike.doherty@espsi.ca, or 1-905-439-9329.

ESPS is also honored to announce that **Prodipto** has joined our team in the capacity of **Senior Project Manager**. Prodipto has over 20 years of strong technical and business experience from institutional to electrical utility, to private consulting.

Most recently Prodipto had his own consulting business and provided technical consulting, technical training and electrical safety training. One of Prodipto's areas of interest and expertise is electrical equipment maintenance. Prodipto is currently an active member of various Working Groups under IEEE/PES Transformer Subcommittee developing new and revising existing Standards. Prodipto can be reached at prodipto.ghosh@espsi.ca, or 1-403-472-7576.

What does the logo mean?

The logo for ESPS is an integral part of the context of the Electrical Safety Program model we want to recommend to our clients.

The intent was to create a logo that is simple in composition (i.e. uses geometric shapes), yet provides a symbol for the company that brands the general Electrical Safety Program solutions that will be delivered. The logo recognizes the hazards of electricity, direct contact & arc flash/blast.

The triangle (i.e. we call it the Arc Flash Triangle) in the centre of the logo represents three key elements with respect to an electrical arc flash, namely available fault current, clearing time and the distance the electrical worker is away from the potential arcing fault location (i.e. the IEEE 1584 formulas keys in on these elements). The hexagon links the six (6) key elements or toolboxes of the Electrical Safety Program, namely:

1. Engineering, Safety By Design (Owner)
2. Equipment, Safety By Design (Owner)
3. Electrical Equipment Maintenance (Owner)
4. Electrical Specific PPE (Owner & Contractor)
5. Electrical Safe Work Practices & Procedures (Owner & Contractor)
6. Electrical Safety Training (Owner & Contractor)

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Events

ESPS at CSSE Conference in Victoria – ESPS will be in **exhibit booth #1** at this year's conference, this will be the first conference ESPS will be exhibiting at, but not the last. We will be officially launching our Phase 2 corporate website during the conference. We look forward to meeting new people and discussing with them the need for an Electrical Safety Program.

ESPS at the CSA Workplace Electrical Safety Conference – ESPS will be participating in this conference with assisting CSA, and presenting and participating in many elements of the conference. We will also have an exhibit booth at this conference, which is the premier electrical safety conference for Canada. The conference will be held in **Calgary, October 17-19**, following the CSA Z462 Technical Committee meetings.

SaskPower's Safety Summit – The President of ESPS, Mike Doherty will be delivering three keynote addresses at SaskPower's Safety Summit in Saskatoon on **Nov. 1, 2007**.

Changes in Regulations and Standards of Practice

What has happened in Canada with respect to energized electrical work practices?

Emerging potential regulatory change related to electrical safe work practices for energized electrical work will impact all electrical workers in Canada. Any company employing the services of an electrical worker (i.e. journeyman electrician, electrical testing and commissioning, power linesman, etc...) either as staff or on a contract basis will be impacted at some level. The changes will also impact non-electrical workers.

Significant changes in Provincial and Federal regulations and standards in Canada related to energized electrical work have increased business related risks to employers to ensure that adequate controls are in place to protect workers who are exposed to shock and arc flash/blast while working on or near energized or potentially energized electrical equipment. These changes will also require that employers focus on ensuring that un-qualified personnel are not exposed to these hazards.

For example in Alberta in 2004 the Province of Alberta added new language to the Alberta Occupational Health & Safety Act, in Part 18:

Flame Resistant Clothing

Use of flame resistant clothing

232 (1)

"If a worker may be exposed to a flash fire or electrical equipment flashover, an employer must ensure that the worker wears flame resistant outerwear and uses other protective equipment appropriate to the hazard."

232 (2)

"A worker must ensure that clothing worn beneath flame resistant outerwear and against the skin is made of flame resistant fabrics or natural fibers that will not melt when exposed to heat."

As well in CSA's, 2006 Canadian Electrical Code (CEC), Part 1, C22.1-06, a new rule has been added:

... CONTINUED ON PAGE 3

CSA Z462 Status Report – August 28, 2007

Dave Shanahan, OHS Standards Project Manager

We have reached the half-way point in the development of the new Z462 Standard. Much of the content for the main body of the Standard has been drafted. We are still collecting resource material relevant to Canadian workplaces for inclusion in the Annex of the Standard. All-in-all, it is shaping up to be a high-value standard for employers, contractors, electricians, and regulatory bodies from B.C. to Newfoundland. Z462 will serve to tie together the Canadian Electrical Code, with safe work practices endorsed by NFPA and IEEE, as well as Hazardous Energy Control Standards from CSA. It will also link the ASTM arc flash hazard evaluation criteria (limits of approach) with some of the protective equipment standards from ULC, IEC, and ASTM.

CSA Z462 will be developed in parallel with the 2009 edition of NFPA 70E. And as much as practicable for Canadian Workplaces, Z462 will be designed to harmonize with the safety requirements of NFPA 70E. As a result, companies and electrical professionals already complying with NFPA 70E should be able to easily adjust their practices to meet the Canadian Standard.

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September

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Check out Events Calendar at www.esps.ca for complete listing

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2006 Canadian Electrical Code Part 1, Rule 2-306

- (1) Electrical equipment such as switchboards, panel boards, industrial control panels, meter socket enclosures, and motor control centers that are installed in other than dwelling units and are likely to require examination, adjustment, servicing, or maintenance while energized shall be field marked to warn persons of potential electric shock and arc flash hazards.
- (2) The marking referred to in Subrule (1) shall be located so that it is clearly visible to persons before examination, adjustment, servicing, or maintenance of the equipment.

The owner of newly installed electrical distribution equipment will have to ensure that this warning label is field applied. This code rule is enforceable as law under Provincial legislation as the CEC Part 1 is adopted into law in every Province and Territory.

With the label applied to electrical distribution equipment, the level of due diligence will increase on the owner and operator of the equipment to ensure they have adequate electrical specific PPE and safe work procedures for energized electrical work in use by the electrical worker will be required.

Appendix B of the 2006 CEC, Part 1 also lists two documents that can be referenced with respect to the electrical hazards of arc flash and shock, IEEE 1584 "Guide for Performing Arc-Flash Hazard Calculations" and NFPA 70E "Standard for Electrical Safety in the Workplace."

Additionally, the CSA in 2006 established, the CSA Standard, CAN/CSA-Z1000-06, Occupational Health and Safety Management Systems (OHSMS) as a National voluntary Standard of Canada. CSA Z1000 "specifies requirements for an Occupational Health and Safety Management System (OHSMS)." It provides specific direction with respect to the OHSMS that it must have commitment of leadership, planning, implementation, evaluation and corrective action elements. Specifically in Section 4.4.2 Preventive and protective measures it advises that:

CAN/CSA – Z1000-06, Occupational Health and Safety Management

4.4.2.2

Preventive and protective measures shall be implemented according to the following priority:

- (a) eliminate the hazard;
- (b) substitute with other materials, processes, or equipment;
- (c) use engineering controls;
- (d) use safer work systems that increase awareness of potential hazards (e.g. lights, signage, beepers, etc.);
- (e) provide administrative controls, such as training and procedures; and
- (f) provide personal protective equipment, including measures to ensure its appropriate use and maintenance.

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Electrical Safety Tools – Maintenance

A PROACTIVE MAINTENANCE PROGRAM PAYS DIVIDENDS

Dr. Prodipto Ghosh, Ph.D. (EE), MBA

Electrical distribution equipment is generally designed for a certain economic service life and it is dependent on operating environment, it's maintenance program and the quality of the original manufacture and installation. Beyond this service life period the equipment should not be expected to function to its original specification with intended reliability. Generally due to poor quality of raw materials, workmanship and manufacturing techniques or due to frequent system faults, over loading, environmental effect, unexpected voltage swings and over voltage stresses on the system during the operation, many equipment failures occur much before their expected economic life span. However, certain equipment is found to operate satisfactorily even after the expected economic life span which may be attributed to good site conditions and good maintenance.

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How does an Electrical Safety Program fit in?

An integral part of managing the associated regulatory risk is to establish revised electrical safe work practices that are consistent with the industry accepted best practices or “standards.” Integrating your current work practices and revised work practices into a comprehensive **Electrical Safety Program** is one approach to mitigating the risk to your workers and the regulations. If you currently don’t have anything in writing or what you have isn’t consistent with the new upcoming standards of practice for Canada, you should create an **Electrical Safety Program** for your company that addresses the hazards of energized electrical work and how to mitigate the risk.

When will CSA Z462 be available?

The CSA Z462 Workplace Electrical Safety Standard will most likely be approved and in print by late 2008 or the first quarter of 2009.

How can ESPS help you?

ESPS is a consulting services company that can provide you with specialized electrical safety services e.g. **Electrical Safety Program (ESP) Audits**, consulting services for **Electrical Safety Program** development, and complete training services related to **Electrical Safety Programs**.

Integrating your current work practices and revised work practices into a comprehensive Electrical Safety Program is the optimized approach to mitigating the risk to your workers and business as well as adherence to regulations and standards.

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