ESPS electrical safety™ PROGRAM SOLUTIONS inc.

Volume 1 | Issue 2 | December 2007

the ESPS buzz©

Merry Christmas and Happy New Year from ESPS!!

It is that time of the year again, and things have been moving fast at ESPS. We can't believe that 2008 is just around the corner! It is making us reflect on how fortunate we all are, and how grateful we all need to be for our families, our friends, our freedom, our work, and the great country, Canada that we live in! We also need to remember that we must respect all that we enjoy, and that in our work we must be safe, no matter what our job description is. Of course when it comes to electrical safety, we all must respect this tool that we use everyday in our lives, whether at home or at work.

We hope this finds you and your family enjoying the festive season, reflecting and being grateful for how fortunate we all are! Be safe!

Best Regards,
Terry Becker & Mike Doherty

Hydro One Chair in Electrical Injury: ESPS is proud to be a donor and partner.

ESPS is glad to announce that effective December 2007, ESPS is a donor and partner on this ground breaking project under the Sunnybrook Foundation, to do research into electrical injury and create a centre of excellence in this knowledge for all of Canada. The following information is provided by the Sunnybrook Foundation on the Chair in Electrical Injury:

There is no centre of expertise in Canada for individuals who have sustained an electrical injury. Healthcare providers across the country work in isolation and usually focus on the management of the immediate physical symptoms of the injury. They may be unaware of the potential physical and non-physical long-term effects which can effect initial care efforts. It is difficult for healthcare providers to develop and maintain expertise in this area, due to the relatively low incidence and prevalence of electrical injuries. Research also indicates that workers are not necessarily provided with the comprehensive assessment, treatment and/or follow-up that can facilitate an earlier return to work or return of function.

Sunnybrook Health Sciences Centre, through Dr. Joel Fish, Medical Director at the Ross Tiley Burn Centre, has been working with Hydro One to provide such a resource on an unofficial basis.

... LEARN MORE go to www.esps.ca

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, shock/electrocution & 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 key in on these elements). The hexagon links the six 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 & Technical Training (Owner & Contractor)

The hexagon is the administrative glue (the overriding Safety Management System elements, i.e. management commitment, organizational chart, roles & responsibilities, etc…) that brings all of the toolboxes together. Within each circle (or toolbox) are a variety of resources (tools) that fulfill the requirements of a

CONTINUED ON PG. 3

contents

www.esps.ca

the ESPS buzz©

www.esps.ca

2008 January

		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

February

					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	

March

						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Events

- February 4–6, SK Safety Council Occupation Division, 35th Annual Industrial Safety Seminar, Saskatoon, SK
- February 27, BOMA Calgary OH&S Workshop 2007, Calgary, AB
- March 4–5, 2008, CSA Z462 Technical Committee Meeting #5, Toronto, ON
- March 17–18, NETA Powertest 2008, New Orleans, LA
- March 18–21, IEEE ESW 2008, Dallas, TX
- March 26, Alberta Electrical League, Electrical Learning Expo 2008, Lethbridge, AB

See Events Calendar at www.esps.ca for complete listing.

Update on CSA Z462:

In October the 5th meeting of the CSA Z462 Technical Committee was held in Calgary, AB. The most significant item addressed was the issue of exclusions. This is an official quote from Dave Shanahan, the Z462 Project Manager:

"As part of our commitment to keep you informed of the Z462 project, please note the following;

The Z462 Workplace Electrical Safety Technical Committee decided at their meeting on October 15 in Calgary that the Scope of CSA Z462 will adopt the sector exclusions contained in Section 90.1 of the Scope of NFPA 70E (2004 Edition). However the Committee also decided to review the proposed mining sector exclusion (Exclusion Item #2) with Canadian stakeholders. For your reference following is a copy of those exclusion statements.

NFPA 70E, Article 90.1(B)

This standard does not cover the following:

1. Installations in ships, watercraft other than floating buildings, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles;
2. Installations underground in mines and self-propelled mobile surface mining machinery and its attendant electrical trailing cable;
3. Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communications purposes;
4. Installations of communications equipment under the exclusive control of communications utilities located outdoors or in building spaces used exclusively for such installations
5. Installations under the exclusive control of an electric utility where such installations:

   a. Consist of service drops or service laterals, and associated metering, or

   b. Are located in legally established easements, rights-of-way, or by other agreements either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations, or

   c. Are on property owned or leased by the electric utility for the purpose of communications, metering, generation, control, transformation, transmission, or distribution of electric energy."

Dave Shanahan,
OHS Standards Project Manager

OH&S Acts & Regulations – Evolution in Saskatchewan

Effective October 9, 2007 the Provincial Government in Saskatchewan amended their OH&S Act and Regulations adding in significant, precedence setting language with respect to arc flash and electrical safety training.

... LEARN MORE see News at www.esps.ca.

Do we have "The Right Stuff" in our Electrical Safety Program?

By Terry Becker, P.Eng., ESPS Electrical Safety Program Solutions INC. and Larry Johnson, Syntech Enerflex.

Do we have "The Right Stuff" in our Electrical Safety Program? Have we learned anything since we started this project? What might we have done differently, if anything? What do we do now that we have the Electrical Safety Program in place? What did we learn, what were the barriers to just getting to the launch pad? Did we have any problems during the count down? Was the launch without any incidents? Did we get a man to "zero gravity" and back safely to earth? Are we finished?

... LEARN MORE go to www.esps.ca, Resource Centre

What Does The Logo Mean? CONTINUED FROM PAGE 1

Safety Management System with the focus on mitigating the hazards of working on or being exposed to energized or potentially energized electrical equipment.

When working on energized or potentially energized electrical equipment, one of the first issues to deal with is identifying the hazards of working with the electrical equipment (i.e. why is there a risk??), the triangle represents the hazards. Following identification of the hazard how do you mitigate your risk?

This is where the hexagon is added as it represents the linked administrative elements of the ESP, with the six tool boxes or resources at each point. Each circle is added as you address how you will use the six tool boxes and associated resources.

ESPS has common law trademark on the logo and the associated text and has made a formal Trademark Application. This will ensure that ESPS protects the business solutions we are offering. The logo becomes an important element to all of the solutions we provide, a key dynamic symbol linked to the business model.

... LEARN MORE go to www.esps.ca.

Lighting Safety/Lighting Maintenance

By Mick Walton, BJ Electric and Tim Driscoll, P.Eng., Shell

As we move rapidly forward on new electrical safety standards and arc flash protection there is an element to safety practices that is often left unquestioned and unanswered. That is lighting, and how it affects safety performance, or can we use lighting as an effective safety tool?

Any light bulb used in the workplace has a predictable end of life. We know for example that the average High Pressure Sodium lamp will fail somewhere between 18,000 and 24,000 hours of life. Given the huge quantities of these lamps used on our industrial work sites we know that lamp replacement is an ongoing issue for our workforces. One oil sand facility has over 18,000 H.P.S. lamps on site. Roughly one third of these lamps will need to be replaced annually. At a conservative estimate of 1 hour per lamp replacement that means 6000 hours of work. Lamp replacements and lighting maintenance is viewed as a menial task by our workforces. However 347 volt lighting has been pinpointed as the leading cause of death amongst IBEW workers. The fixtures are often inaccessible and the only way they can be reached is by use of ladders or fall arrest equipment. As one leading electrical engineer states "lighting maintenance is extremely hazardous to our workers. The work is often performed with live voltages present, in hazardous locations and in elevated locations."

The most effective way to deal with these issues is to design and engineer the "problem out". Provide an effective way of isolating light fixtures in the industrial environment with line of site for the worker.

Make electrical consulting firms provide a detailed maintenance plan with their lighting designs. Showing the owners how the fixtures can be isolated and how they can be safely reached.

Remember that this type of work occurs with startling regularity. In the case of the above mentioned oil sands facility there is an average of 1.64 lamps being replaced every day. ... CONTINUED

... LEARN MORE go to www.esps.ca, Resource Centre

Electrical Arc Hazard

Understanding assessment and mitigation - ASSE Professional Safety, January 2007

By H. Landis Floyd II and Daniel R. Doan

"Historically, electrical hazards were viewed primarily as electric shock or electrocution hazards. Electric shock entails passage of electric current through the body. A shock victim generally makes contact with an energized conductor or otherwise becomes part of the electric circuit. While addressing the electric shock hazard is important – it is the cause of most fatal injuries from electric energy (Cawley & Homce, 2003, 2006) – it has masked another electrical hazard associated with the intense radiant and convective energy released during an electric arc flash event. A person need not make physical contact with an energized conductor or be part of the electrical circuit to be injured by arc flash. The victim may be several feet away from energized conductors or equipment and be severely injured by the intense thermal energy transfer produced by an electric arc."

... LEARN MORE go to www.esps.ca, Resource Centre, White Papers ...

the ESPS buzz©

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."

Contacts: ESPS
Electrical Safety Program Solutions INC.

Alberta office:
363 West Ranch Place SW
Calgary, Alberta, CANADA T3H 5C3

Ontario office:
823 Donegal Avenue
Oshawa, Ontario, CANADA L1J 6K5

Terry Becker, P.Eng., C.E.M.
Chief Executive Officer,
Senior Management Consultant
C 403.465.3777 (ESPS)
P 403.532.9050
F 403.532.9051
E terry.becker@espsi.ca

Mike Doherty, IEEE Senior Member
President,
Senior Management Consultant
C 905.439.9329
P 905.576.9329
F 905.576.1383
E mike.doherty@espsi.ca

Dr. Prodipto Ghosh, Ph.D. (EE), MBA
Senior Project Manager
C 403.472.7576
P 403.532.9050
F 403.532.9051
E prodipto.ghosh@espsi.ca

Barry Fraser, ESCO
Senior Project Manager
C 403.510.3096
P 403.532.9050
F 403.532.9051
E barry.fraser@espsi.ca

Keith Wright
Senior Project Manager
C 403.483.5519
P 403.532.9050
F 403.532.9051
E keith.wright@espsi.ca

www.esps.ca