

# Electrical Business

THE AUTHORITATIVE VOICE OF CANADA'S ELECTRICAL INDUSTRY

**DON'T MISS**



**THE NEW LHTQ™**  
on page 5.

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LED cove lighting system offers mounting tracks and fewer system components for quick onsite assembly.

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What do you get when you cross an electrocuted lineman with a manager of health & safety and a plastic surgeon?

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Pulse-start system lamps are available in wattages ranging from 50 to 875.

# Workplace theft...

what can *you* do?

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ELECTRICAL BUSINESS is the magazine of the Canadian electrical industry. It reports on the news and publishes articles in a manner that is informative and constructive.

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▼ From the editor



## Electrical industry aims to Feed the Children

Back in July, Steve Elsdon told me about an industry initiative happening this October; a charitable initiative for starving children in both Canada and other parts of the world through Feed the Children. It was started by Wayne Donaldson, and is being championed by both Wayne and Steve, Wayne's wife Mary Ellen and, at last check, folks like Elaine Gerrie, Carol McGlogan, Dave Syer, Dick Roney, Mike Gentile and Grant Meadows.

The idea came to Wayne as he and Dick discussed the effects the cost of raw materials, fuel, food, etc., would have on Canadian consumers' buying behaviours and disposable income. Then Wayne's thoughts turned to the cost of grains going up 35% to 40%, and wondered how much more the starving of the world would suffer as a result. His concern turned into an idea.

"Dick and I dine out with our wives every once in a while, and it's not unusual to spend \$250 to \$300 when we do," Wayne tells me. He suggested to Dick that, rather than go out for dinner next time, why doesn't everyone just come over to his place? Wayne would cook, and Dick would bring the wine. Then, Wayne asked his friend, "would you agree that we subtract those costs from the \$300 we would normally spend and give the rest to a charity to feed kids?"

Dick thought this was a great idea, which gained further momentum at the S&D Conference in Victoria, where still more people got on board. Wayne did some research into charities

and came upon Canadian Feed the Children (CFTC), where "I discovered they not only feed kids in other countries, but also in eight Canadian provinces". In addition, CFTC has agreed that, since the group is doing its own fundraising, 96% of the funds raised go toward actual charitable work.

Now, the thought of electrical folks doing something nice for charity is not a new concept and, when we do it, we often tell everyone about it. Hey, it's good PR, right? But you'll notice that I haven't listed the companies for which these people work. That's what makes this concept unique: it's all about *the individual's* effort for charity—not necessarily his company's.

"Our goal is to energize the industry to hold fundraising events around October 16, World Food Day," says Wayne. "Ideally this would be one of two or three efforts every year, but we need to be successful with the first before we move forward." \$200,000 is the goal for the first 12-month period.

A website with more information on how you can get involved is in the works, and may even be live by the time you read this. Meantime, keep reading Electrical Business, and stay tuned to EBMag.com and our newsletter, E-Line, for updates as they come available. For now, says Wayne, "Anyone who would like to get involved should contact any of us... we would certainly welcome their participation".

*Anthony Capkun*

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Electrical Business speaks with contractors to uncover the extent of their concern regarding workplace theft—by both outsiders and insiders. Of major concern was simple theft of tools, and of materials, like copper, aluminum and zinc. Learn what you can do to prevent theft in and from your workplace.

### FEATURES

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New Brunswick has new vision for community college network and apprenticeship, Manitoba set to expand worker compensation coverage, and Durham College to expand its Skills Training Centre.

#### 20 Ontario's ESA moves from reactive to proactive: the case for electrical product safety regulation

Through legislation, the Ontario public's electrical watchdog—the Electrical Safety Authority—finally has some 'teeth' regarding electrical product safety; unfortunately, other jurisdictions in Canada have yet to pass similar legislation. However, there's hope that what started in Ontario will result in a national solution to the effective management of more than just unsafe electrical product issues.

#### 22 What do you get when you cross an electrocuted lineman with a manager of health & safety and a plastic surgeon?

What started as a straightforward investigation into an electrocution mishap ended up as a dedicated medical service for electrical professionals and the creation of a new chair in electrical injury at one of Canada's preeminent burn centres.

#### 24 Infrared measurements take some fine tuning for best results

Infrared (IR) non-contact temperature measurement tools are handy devices, but taking an accurate reading involves more than just pointing the tool at an object. The properties of the material being measured, as well as of those around it, can vary considerably, creating a number of potential challenges for technicians.



#### 26 Largest Lightfair Las Vegas to-date

Last issue, Electrical Business presented some of its top picks from among all the new lighting products introduced at the show. This time we wanted to draw particular attention to awards ceremonies that took place during Lightfair—both of which recognize projects from around the world that push the lighting envelope.

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**PRODUCTS RECALLS**

*Outdoor lighting fixtures*

Progress Lighting has announced a voluntary recall for its outdoor ceiling lights (models P5526-20 and P5526-44), which are three-light close-to-ceiling fixtures with solid brass construction. A weld that affixes a mounting bracket to the ceiling pan may fail, which could cause the fixture to fall. Manufactured in China, the lights were distributed between January 19, 2007, and November 21, 2007, and 29 units were shipped to Canada. The company has received reports of six fixtures falling, but no injuries. Consumers should contact Progress to arrange for the fixture to be repaired at no charge. Contact Progress at (877) 369-4548 or visit [www.progresslighting.com](http://www.progresslighting.com).

*Indoor ceiling light fixture*

Progress Lighting has announced another voluntary recall: this one for its International Series indoor ceiling light fixtures. Here, the attachment of a cable that supports the light fixture may fail, causing it to fall. The company has received reports of 15 fixtures falling, one causing injury. Included in this recall are the following product numbers:

P2854-09EBWB	P3443-09	P3791-09
P2855-09EBWB	P3444-09	P4263-09
P2856-09EBWB	P3445-09	P4264-09
P2859-09EBWB	P3789-09	P4265-09
P2860-09EBWB	P3790-09	P4265-09EXP
P2861-09EBWB		

Manufactured in China, the product was distributed between January 1, 2005, and March 7, 2008, and about 1319 units made their way into Canada. Contact Progress to arrange for the fixture to be inspected and replaced at no charge. Call (877) 369-4548 or visit [www.progresslighting.com](http://www.progresslighting.com).

*CO and CO/smoke alarms*

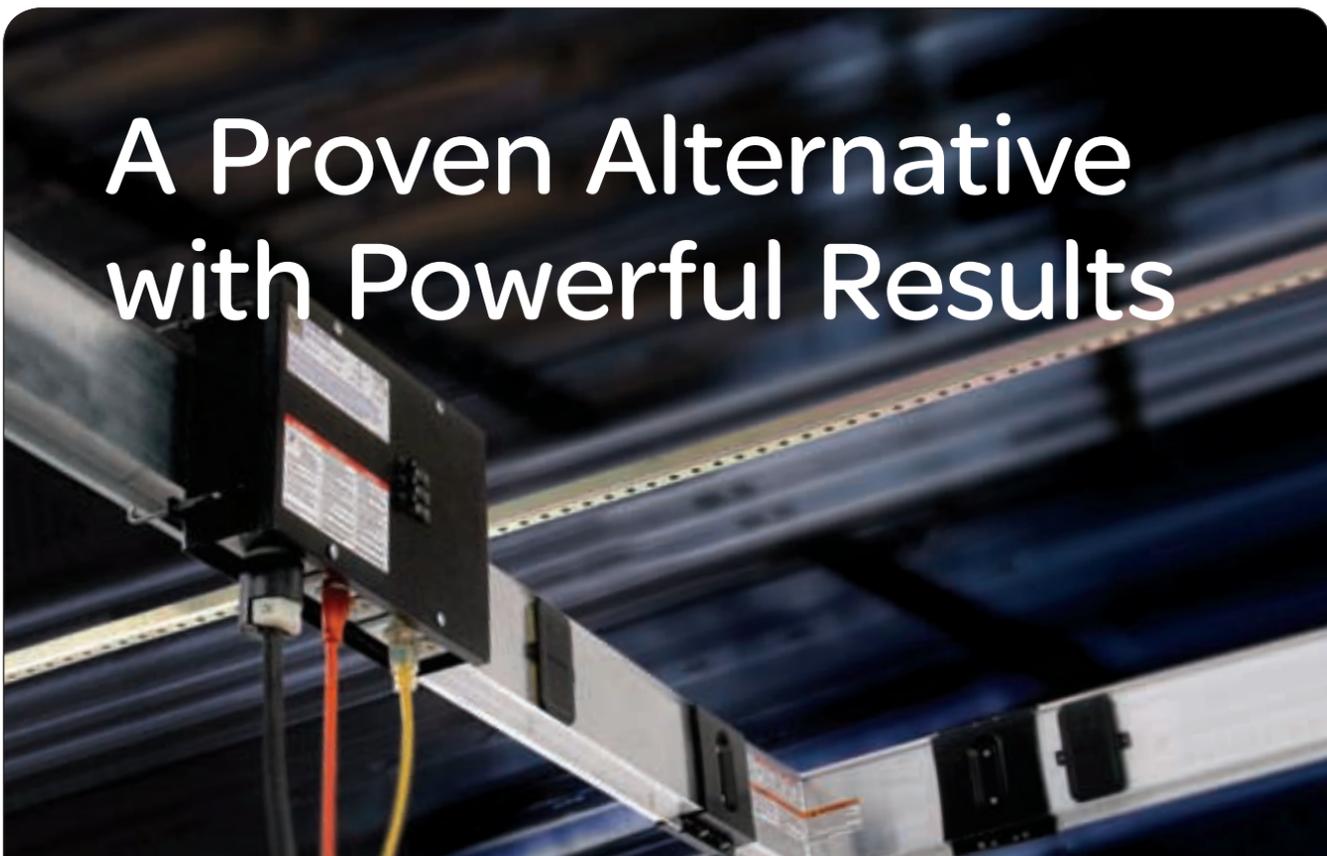
Maple Chase Co. has announced a voluntary recall of the Firex-branded 10000 series CO alarms and 12000 series smoke/CO combo alarms sold in Canada with the item numbers 12000C and 12400C. Manufactured in Mexico, the alarms may go into a “double chirp” fault mode in the presence of CO prior to the unit going into full alarm mode. This early fault is a safety hazard because a consumer may take the alarm out of service once he

determines that pressing the Reset button does not correct the fault.

The recall applies to units manufactured between June 1, 2007, and February 1, 2008, and there are about 36,000 units across Canada. Affected units can be identified by the date code, which appears on the back of the unit. Contact Maple Chase to receive a free comparable replacement alarm and make arrangements to return affected alarms. Call (888) 879-3906 or visit [www.firexsafety.com](http://www.firexsafety.com).

*Hammer drill*

Robert Bosch Tool Corp. has announced a voluntary recall of its 1191VSR (1191VSRK) hammer drill (with serial number starting with “7”)—about 250 of which were sold in this country. The trigger switch may stick in the On position, meaning the tool will continue to run after releasing the trigger, possibly causing injury. To-date, the manufacturer has received no complaints or reports of injury. Manufactured in Malaysia, the hammer drills were distributed between July 2007 and April 2008. Contact Robert Bosch Tool Corp. at (877) 472-0007 or visit [www.boschtools.com](http://www.boschtools.com).



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## Objective-based industrial electrical code receives approval

The CSA-OBIEC (objective-based industrial electrical code) Technical Committee has approved two standards: C22.4 No. 1, Objective-based industrial electrical code, and C22.4 No. 2, OBIEC Safety management system-Requirements. These OBIEC standards are intended for use by authorized industrial users as an alternative to the Canadian Electrical Code.

OBIEC supporters say the benefits for industry will be significant, including enhanced safety performance and design flexibility with a strong emphasis on superior engineering. “The OBIEC has an element of continual improvement that includes operations and maintenance requirements, providing for a more complete cradle-to-grave life cycle for industrial electrical installations,” they say.

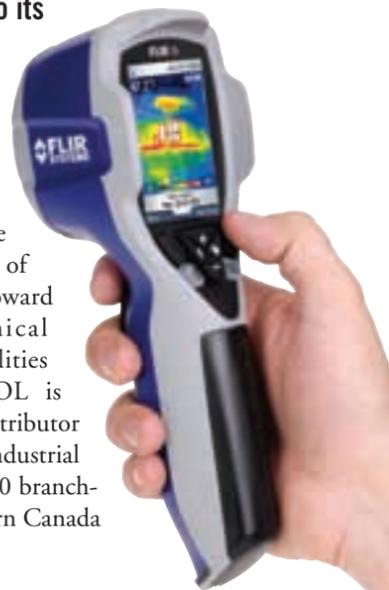
OBIEC will encourage global best practices, products and technologies, say supporters, and will serve to lay a foundation for harmonization of an industrial user’s Canadian and global operations. The CE Code, NEC, IEC, IEEE and other industry-recognized standards are referenced (with the CE Code serving as the benchmark for measuring safety performance).

Based on early pilot projects, industry can realize 10-15% or greater in overall electrical installation cost savings while maintaining or even improving safety performance. Under an OBIEC safety system, supporters say, engineering designs will better reflect electrical installation specs derived from the OBIEC’s safety objectives rather than under the current safety system, “where there is a tendency to pass on design responsibility to installers, relying on their knowledge of prescriptive requirements to compensate for gaps in design”.

For more information, visit [www.obiec.org](http://www.obiec.org).

## FLIR adds EECOL to its supplier channel

FLIR Systems Ltd., a manufacturer of infrared cameras, announced it has selected EECOL Electric to provide its latest categories of cameras geared toward electrical/mechanical systems and facilities maintenance. EECOL is a wholesaler and distributor of electrical and industrial products with over 60 branches throughout Western Canada and South America.



**Mr. Electric expands in Canadian market**

Mr. Electric, the franchise organization, has expanded again in the Canadian market, citing new locations in Alberta and Newfoundland & Labrador. The franchise owners are:

- Steven Barry, Edmonton
- Barry Van Ankum, Calgary
- Steve Muggridge, Brooks/Medicine Hat
- Dave Visser, Lethbridge
- Tina Pomroy, St. John's

In total, Mr. Electric operates 14 franchise locations in Canada, with plans for future growth across the nation.

**Triacta signs deal with Schneider**

Triacta Power Technologies has signed a distribution and OEM agreement with Schneider Electric under which the latter will distribute Triacta's current product line of smart metering hardware and Web-based software under the Schneider Electric and Square D brands. Schneider will also embed Triacta meters into its electrical panel product lines.

Incorporating Triacta's technology into electrical panels enables Schneider to offer sub-metering services in multi-tenant buildings such as office towers, condominiums, apartment buildings and shopping centres. Customers will be able to view their energy consumption and billing information online via a secure website, receive automated reports via e-mail and import tenant billing information directly into their finance systems.

**Osram wants to send you packing**



Osram Sylvania announced the first of five winners in its Bright Lights, Big Events contest: Scott Brouwer, an electrician with North Star Electric (Burlington, Ont.), who has elected to go to The Calgary Stampede on Osram's dime. Brouwer was awarded an all-expenses paid trip for two (including return transportation and two nights accommodation) along with \$500 spending money.

Osram also congratulated Espo Electrical Supply of Oakville, Ont., a key supplier to North Star.

Through its five prizes, the Bright Lights, Big Events contest celebrates five major Canadian cities—Vancouver, Calgary, Toronto, Montreal and Halifax—and promotes the exploration of Canadian culture within each. Winners like Brouwer choose which city they would like to visit, as well as a uniquely Canadian performance, concert or event of their choice.

To enter, simply request a contest card from your local distributor every time you purchase Osram Sylvania products. Each contest card includes a unique promo code, used to enter. But hurry! The contest runs until August 31.

**2009 CE Code and CSA Z462 conference series**

CSA has launched a five-city, two-day conference series on electrical safety addressing changes in the 2009 CE Code, as well as the launch of the new CSA Z462, Electrical Safety in the Workplace. CSA expects attendance from: provincial regulators and ministry officials; occupational health and safety professionals; plant maintenance and safety managers/supervisors/trainers; and, of course, electrical contractors, engineers and workers.

The forum will cover all aspects of your electrical safety program:

- Changes to the 2009 CE Code
- Introduction to the new CSA Z462 standard
- Arc flash mitigation, prevention, and protection
- Electrical safe work planning—contractor safety
- Product safety

- PPE: your last line of defence
  - Facilities management issues
  - Building electrical safety into your occupational health and safety management system
  - Technical training: electrical safety procedures
- Check the Calendar page for dates, locations and registration information.

**There's IED Rewards, and then there's IED Awards**

Awards were handed out at the recent IED (Independent Electrical Distributors) annual general meeting, recognizing both members (distributors) and suppliers:

- Gimpel Electric was recognized for the greatest number of approved suppliers.
- J.D. Paré Electric was recognized for the greatest increase in total purchases.
- Dixon Electric won the Marketing and Activity Award.
- The Marketing Partner of the Year was Greenlee.
- René Marineau took home the Tom Torokvei Award, which recognizes strong leadership and dedication to independent electrical distributors throughout Canada.
- Hubbell recognized Bird Stairs as Distributor of the Year
- IPEX recognized Tesco Electric Supply as Partner of the Year



IPEX president Alain Lanthier accepts the Supplier of the Year award.

- Leviton recognized EECOL Electric (Surrey, B.C.) for greatest sales increase across the board.
- Sylvania recognized Thornes as Partner of the Year
- Panduit recognized EECOL Electric B.C. for overall support and year-over-year growth.
- Thomas & Betts awarded its Signature Service Champion Award to EECOL Electric (Kelowna, B.C.)
- Liteline's "Sail Away" winners were Sylvie Boileau of Dubo, Allan Hiebert of E.G. Penner Building Centres, and Dave Austin of Electrical Wholesale.
- The General Partner Award of Excellence was given to Ann McLoughlan of McLoughlan Supplies Ltd. and IPEX was recognized as Supplier of the Year.

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**GE's "Low-Voltage Revolution Tour"**



GE Consumer & Industrial's Electrical Distribution business will be taking its product portfolio on the road and visiting directly with electrical distributors and industrial end-users throughout North America. For a six-month period beginning this month, GE's "Low-Voltage Revolution Tour" will travel more than 12,000 miles, visit 31 cities throughout Canada and the United States, and spend between two and four days in each major metropolitan area.

"We've been exploring various ways of getting our low-voltage lineup in front of our customers and partners who need it

most," explained Dick Jackman, general manager of Industrial Products at GE. "The tour will give them a chance to touch and feel these new products and see how they can work for them." The tour will feature a 45-ft industrial trailer containing the latest in GE electrical distribution technology and applications, and each tour stop will include digital presentations from product managers as well as onsite product demonstrations. For Canadian stops, check out the Calendar page.

**GE's power fuse operations acquired**

Carbone Lorraine has acquired General Electric's Power Fuse operations from GE Consumer & Industrial business through its American-based Electrical Protection division, Ferraz Shawmut LLC. Based in Vieques, Puerto Rico, the operations will be combined with the existing Ferraz Shawmut medium-voltage fuse business based in Newburyport, Mass.

Acquiring GE's medium-voltage fuse business represents a significant expansion for Ferraz Shawmut in terms of product offering and fuse technology, says Carbone, and strongly enhances its position in this segment of the power fuse industry.

Carbone says it is following through on a selective acquisitions policy aimed at accelerating the profitable growth of

its activities in the coming years, which includes reinforcing its offerings in medium-voltage products, a segment targeted by the Electrical Protection division.

**DuPont increases pricing for Nomex**

DuPont Advanced Fiber Systems announced a global price increase averaging 10% for its Nomex products (effective July 1 or as contracts permit). Nomex—DuPont's heat- and flame-resistant fiber—is used across a range of applications, from filtration to electrical insulation to protective fabrics. The company says this is in response to extreme volatility in costs for raw materials, energy, transportation and logistics, which cannot be totally offset by aggressive productivity and cost reduction measures.

**Cooper Bussmann contributes to arc flash research**

Cooper Bussmann contributed \$500,000—a Platinum level sponsorship—to the Arc Flash Collaborative Research Project organized by the Institute of Electrical and Electronic Engineers (IEEE) and the NFPA.

"Electrical safety and knowledge of the hazards associated with arc-flash has come a long way since arc flash tests were initiated in 1996 at the Cooper Bussmann Gubany Center for High-Power Testing," said Kevin Stein, president, Cooper Bussmann.

IEEE and NFPA joined forces on an initiative to fund research and testing to increase the understanding of arc flash. The results of this collaborative project will provide practical safeguards for employees in the workplace as well as statistical data for improving electrical safety standards and predicting the hazards associated with arcing faults (and accompanying arc blasts). The multi-year project is estimated to cost a total of \$6-\$7 million.

**IEWC achieves ISO certification**

Industrial Electric Wire and Cable (IEWC) Canada has achieved ISO 9001: 2000 certification in both its Toronto, Ont., and Montreal, Que., distribution centres, making them the 9th and 10th in the IEWC global family to do so. "This milestone in IEWC Canada's development is one that our staffs in Toronto and Montreal are very proud of," said Eric Paszat, president of IEWC Canada.

**Energy Star recognizes Globe Electric**

Globe Electric Co. Inc.—a designer, manufacturer and marketer of lighting and electrical products based in Montreal, Que.—has been named the 2008 Energy Star Manufacturer of the Year. This is the second consecutive year Globe has been recognized by the Energy Star program, having won Recruit of the Year in 2007. The company says its line of Energy Star-qualified products expanded from one to nine categories, with the number of qualified products jumping from 40 to over 350.

**Altair and ilumisys enforce LED patent**

Altair Engineering, parent company of LED lighting developer ilumisys, has been granted a judgment and permanent injunction against High Tech Global Group Co. Ltd. (HTGG), a Taiwanese manufacturer. Altair brought action against HTGG when it discovered the company was infringing upon its patent for LED-driven replacement lighting for fluorescent lamps.

**Ontario and Wal-Mart plan \$5.9-million solar demonstration**

The Ontario Ministry of Research and Innovation (MRI) and Wal-Mart Canada are pursuing a project with Menova Energy where they will provide up to \$5.9 million to support a demonstration of the company's Power-Spar technology, which is to be installed and tested on the roof of a Wal-Mart store in Ontario (yet to be selected/constructed).

The Power-Spar is a high-efficiency solar concentrator that can be configured for electricity, heat, cooling and/or lighting solutions. It consists of a parabolic trough reflector that concentrates the sun's







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Suggested reading from Fluke's free library of application notes:



- Measurement of Adjustable Speed Drives
- Stray Voltage Affects Multimeter Measurements
- Why True-rms?

energy onto a modular absorber, which then converts the energy to electricity or heat, or transports the light to a building's interior.

Under the proposed project, Ontario will provide Menova with a \$2.8-million forgivable loan through the MRI's Innovation Demonstration Fund. Wal-Mart Canada will throw in up to \$3 million. Menova says this demonstration will be used to assess the potential benefits of the system in helping Wal-Mart meet its long-term sustainability goal to be supplied by 100% renewable energy.

**C of Q for Nova Scotia's alarm and security technicians**

Nova Scotians with substantial experience in the alarm and security trade can be recognized for their skills through a new certification process.

"The Alarm and Security Technician Exam is a critical step toward raising the standard for the installation of electronic security systems in Nova Scotia," said Dan Small, chair of the Canadian Security Association's government relations committee in Nova Scotia. "These highly skilled certified journeypersons will help build a skilled workforce to meet Nova Scotia's growing security needs."

The Department of Labour and Workforce Development—in partnership with industry and the Canadian Security Association—introduced a new provincial certificate of qualification examination. Tradespeople with 9000 hours or 4.5 years of hands-on experience working in the trade can write the certification exam without completing a full apprenticeship program. To qualify, they must produce references from two individuals in the trade.

"I encourage all skilled tradespeople working in the alarm and security industry to write this exam," said Mark Parent, minister of labour and workforce development. "The more certified journeypersons we have in this province, the more apprentices we can train."

**OPA funds \$650,000 for new technology projects**

The Ontario Power Authority announced the list of projects receiving financial support from its Technology Development Fund during three rounds of funding in 2007. The contracts awarded amount to over \$650,000, leveraging an additional \$11.4 million in outside funding.

Of particular interest among the 10 projects are:

- Nanowire-solar cells
- The effects of electromagnetic interference (EMI) on farm stray voltage (SV)
- Infrared solar cells made by solution coating
- Lightsavers (white LED technology)
- Energy-efficient mechanical pulping
- Variable frequency drive (VFD) performance testing

**2008 "Tough Truck Driveaway" promotion**

Knaack LLC recently announced its Weather Guard 2008 "Tough Truck Driveaway" promotion, which runs until November 30. For the third year in a row, one grand prize winner will get the keys to a new Toyota Tundra. The truck will be upfitted with various Weather Guard storage equipment and accessories valued at \$2700. Enter the contest at [www.weatherguard.com/toughtruck](http://www.weatherguard.com/toughtruck).



The Technology Development Fund was established in 2006 to support the development of "pre-commercial" renewable energy, conservation or generation technologies that need testing or demonstration prior to going into the market.

**NAED launches new certification program**

The National Association of Electrical Distributors (NAED) is developing a new certification program for distributors, manufacturers and others in the channel: the Certified Electrical Professional (CEP). The first testing for both inside and outside sales will be offered June 2009. Applicant bulletins will be sent March 2009 and actual applications will be available April 2009.

Initial certification offerings will be for inside sales and sales, and NAED plans to offer certification for additional positions in the future. The CEP credential is available to both distributor and manufacturing professionals.

NAED feels certification gives its holder credibility in the industry and increases the professionalism of the industry as a whole. By standardizing and validating the baseline knowledge in such areas as product knowledge, customer service, sales skills and soft skills, it ensures that employees have the skills necessary to succeed in the positions they hold.

**More N.L. high schools boast Futures in Skilled Trades**

With an investment of \$750,000 in Budget 2008, Newfoundland & Labrador will expand the Futures in Skilled Trades and Technology high school program to an additional 35 schools across the province. New equipment is being shipped to these schools, ready to be used for the new school year.

The courses in these schools engage students in a variety of activities associated with technology and skilled trades, and are supported with industrial equipment and a variety of power tools.

**New Brunswick aims to improve anglophone skilled trades programs**

A three-year plan to restructure and improve the anglophone school system's Skilled Trades and Technology Education (STTE) program was unveiled today by New Brunswick education minister Kelly Lamrock.

"With the growing demand for skilled tradespersons in our province, it is imperative that we provide students with a variety of career pathways," said Lamrock.

Students who graduate from the STTE program will be knowledgeable about career opportunities in the skilled trades and should be able to make informed choices about post-secondary education options. One of the 10 major initiatives of the program is to ensure a seamless transition from high school to skilled trades training by collaborating with the Department of Post-Secondary Education, Training and Labour.



(Front, from left) Post-secondary education, training and labour minister, Ed Doherty, along with Kelly Lamrock, education minister. (Back) tourism and parks minister, Stuart Jamieson, and Jack Keir, energy minister.

During a visit to Simonds High School in Saint John, a memorandum of understanding (MOU) was signed by Lamrock and post-secondary education, training and labour minister, Ed Doherty, to move the initiative forward. Under the MOU, the two departments will collaborate to develop dual enrolment opportunities where community colleges recognize high school credits in their programs.

Another major component of the STTE program is to strengthen partnerships with industry to enrich course offerings to students. Education has many active partnerships, including four with New Brunswick housing manufacturers: Kent Homes, Prestige Homes, Hospitality Homes and Maple Leaf Homes. Each of the companies provides jobsite training and experiential learning for students. **EB**

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Greg Guisso

**Greg Guisso** has been named national sales manager for **Venture Lighting International's** Canadian sales office. Guisso possesses over 18 years of electrical and lighting sales experience, selling to industrial, commercial and institutional (ICI) end-users, and has had extensive experience managing distributor relationships throughout his professional career. In this new position, Guisso is responsible for the reintroduction and management of the Venture Lighting Canada distribution sales channel under **Ballastronix** and **Venture HID** ballast and lamp brands. He has a Bachelor of Arts degree from Wilfrid Laurier University in Waterloo, Ont., and has maintained continuous technical and selling skills training and certifications throughout his career.



Dave Taub

**Chess Electric** (manufacturer's agent for GE Multilin, Meltric and Ericson) has appointed **Dave Taub** to technical representative for the Ontario areas of Cambridge, Mississauga and Barrie. Taub will draw upon his years of experience in sales and distribution to help Chess further develop its distribution channels. He can be reached at (416) 476-6333.



Mike Mattei

**Leviton** has appointed **Mike Mattei** to the position of vice-president and general manager for its Commercial and Industrial business. In this post, Mattei is responsible for building sales of the company's commercial and industrial wiring devices and systems across its electrical distribution, retail and end-user market channels. He joined Leviton in 2004 as director of Fiber Optic Systems when Leviton acquired and integrated his company, Fiber Management Solutions, into its Network Solutions business.



Deborah Cahill

The **Electrical Contractors Association of BC** has appointed **Deborah Cahill** executive director. Cahill was formerly with the Greater Toronto Electrical Contractors Association where she was assistant to the director, department head of human resources, and responsible for OH&S and educational training for the membership. ECABC says Cahill has served on a number of committees and is no stranger to the national electrical scene.



Richard Abernethy

**Richard Abernethy** has been named vice-president of **Life Safety Brand Management** with **Hubbell Lighting**. He has 27 years of experience in the lighting industry and report to the vice-president/general manager of Indoor Brands at Hubbell Lighting. He has previously served as national sales manager of solid-state lighting and held various positions with Lithonia Lighting. Meantime, **John Lane** has been appointed engineering manager of life safety products for **Dual-Lite**, a Hubbell Lighting brand. Lane possesses 25 years of experience in the industry, 20 of which were devoted exclusively to life safety equipment. His primary role involves managing the new product design engineering team.



John Lane



Bill Robson

**Greenlee** has named **Bill Robson** its vice-president of sales and marketing. Robson has 29 years of leadership in sales, marketing, distribution and dealer management, and comes from Textron's E-Z-Go business unit.

**Stahlin Non-Metallic Enclosures** continues its expansion into Canada with a new distributor agreement with **Lord Electric**, which has offices in Edmonton and Calgary, Alberta. Lord held an open house for its customers, and the door prize of a Playstation 3 was won by **Brent Connell** of **Edmonton Electric**. Guests were also treated to an Alberta Beef meal.

**Chloride Group PLC**—a provider of power solutions—announced the appointment of **Joe Nitiss** as president of its North American operations. Nitiss is responsible for strategic planning, oversight and growth of the company's services and products in the North American market. He joins Chloride from Honeywell where he served as general manager of **Honeywell Cable Products**. Prior to that, he held marketing and sales roles within Emerson Electric.

**Ihor Lys**, chief scientist of **Philips Solid-State Lighting Solutions**, was announced the 2008 National Inventor of the Year by the Intellectual Property Owners (IPO) Education Foundation for the invention of Powercore technology. Lys co-founded **Color Kinetics**, which was subsequently acquired by Philips.

**Bill Charbonneau**, **Valuelight's** regional sales manager for Western Canada, announced the appointment of **GB Agencies** as Valuelight's sale agent for the Province of Manitoba. GB Agencies was created by owner Gary Beer just this year. He possesses 16 years of industry experience, and was originally trained and certified as a Journeyman electrician. GB Agencies can be reached in Winnipeg at (204) 219-3160 or gbeer@shaw.ca.

**TCP Inc.** has issued several personnel announcements. **Charles Gallagher** has been hired as vice-president of operations and **Jeffrey Bristol** as director of retail sales, while **Peter Weller** has been promoted from director of engineering and product development to general manager. Gallagher joins TCP from Penske Logistics, where he was the general manager of Whirlpool operations, whereas Bristol formerly served as director of national accounts for Philips Lighting Co. **EB**

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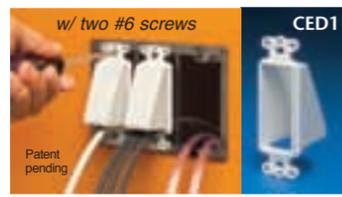
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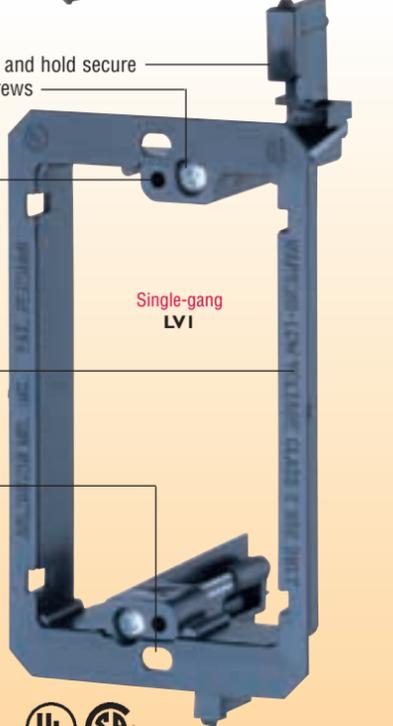


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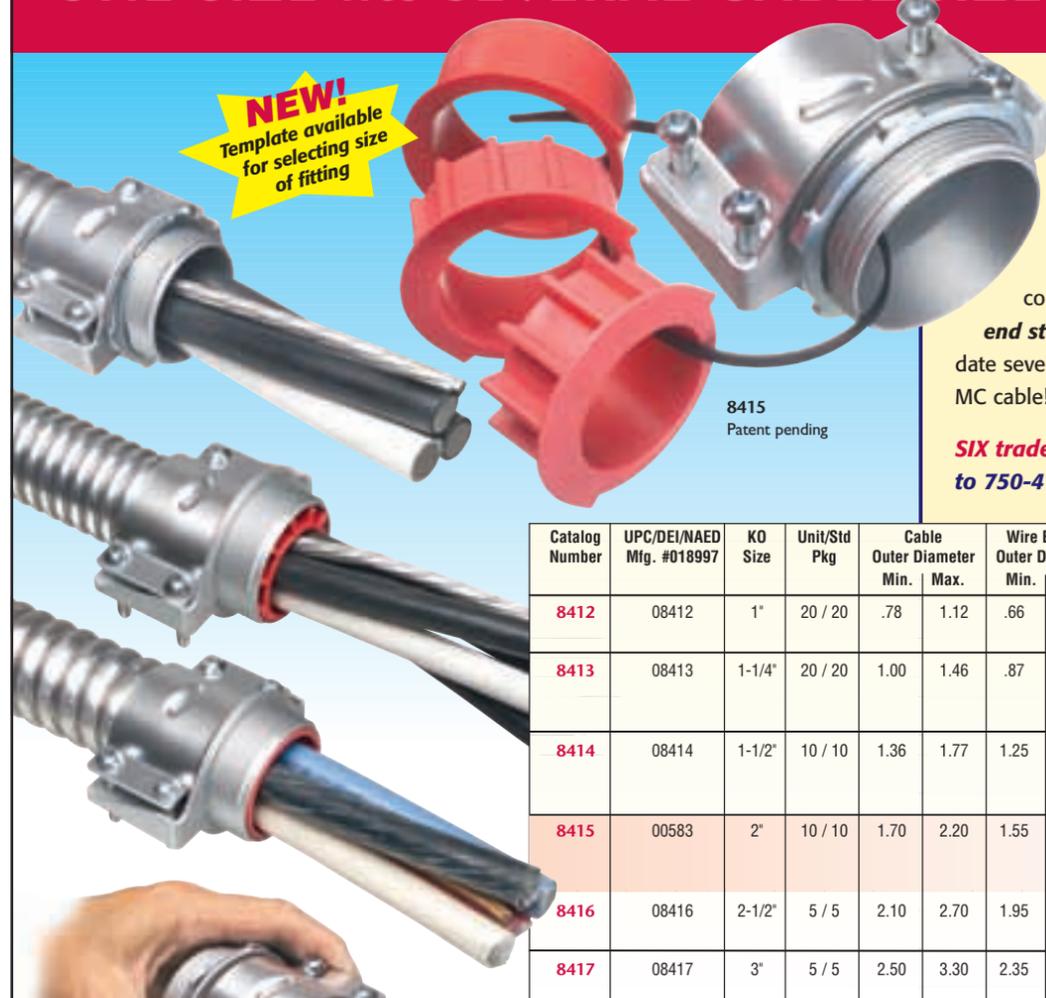
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ONE SIZE fits SEVERAL CABLE SIZES!

NEW! Template available for selecting size of fitting

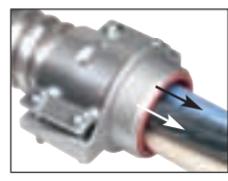


Save time and money with Arlington's new, low cost, versatile MC cable fittings. Super-convenient and cost-effective! Each fitting has an end stop, but it also comes with **three additional end stop bushings** that accommodate several different kinds and sizes of MC cable!

SIX trade sizes fit from 6/3 to 750-4 MC cables

Catalog Number	UPC/DEI/NAED Mfg. #018997	KO Size	Unit/Std Pkg	Cable Outer Diameter		Wire Bundle Outer Diameter		Conductor size # of Conductors* (AWG/KCMIL)
				Min.	Max.	Min.	Max.	
8412	08412	1"	20 / 20	.78	1.12	.66	1.00	6/3, 6/4, 4-3, 4-4, 2-3, 2-4, 1-3
8413	08413	1-1/4"	20 / 20	1.00	1.46	.87	1.37	2-3, 2-4, 1-3, 1-4, 1/0-3, 1/0-4, 2/0-3, 2/0-4, 3/0-3
8414	08414	1-1/2"	10 / 10	1.36	1.77	1.25	1.59	2/0-4, 3/0-3, 3/0-4, 4/0-3, 4/0-4, 250-3, 250-4
8415	00583	2"	10 / 10	1.70	2.20	1.55	2.05	4/0-4, 250-3, 250-4, 300-4, 350-3, 350-4, 500-3
8416	08416	2-1/2"	5 / 5	2.10	2.70	1.95	2.40	500-3, 500-4, 600-3, 600-4, 750-3
8417	08417	3"	5 / 5	2.50	3.30	2.35	3.00	600-4, 750-3, 750-4

- 1 Loosen screws. Insert end stop bushing if necessary. Slip connector onto MC cable. Retighten screws on strap.
- 2 Determine the end stop bushing to use by sizing it to the cable bundle (not the metal jacket). **Incorrect size shown at right.**



(Metal jacket never goes through the end stop.)

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\* Examples of 3- and 4-conductor cables. Note: Cable dimensions can vary dramatically between manufacturers.

# Hammer choices on the market

## What's a toolkit without a hammer drill of some kind?

And just to be clear, rotary hammers are still hammer drills, only their construction allows them to deliver more powerful hammer blows, thereby helping you drill bigger holes, faster. Features to keep in mind when shopping for one include: blows/impacts per minute (bpm/ipm), revolutions per minute (rpm), weight and drilling diameter. Here we present some of the latest models to hit the market.

■ Milwaukee has added a 7/8-in. compact SDS rotary hammer to its V18 lineup. Powered by Li-ion technology, the 12-in. long, 8.8-lb tool delivers 4500 bpm and 9450 ft/lb of impact energy (suitable for drilling small- to medium-diameter holes of 5/8 in. or lower). With 0-1200 rpm, the tool promises to hit hard and drill fast with its Lok-Tor motor, and it also has a chipping function. The rotary sports a non-slip, soft-grip handle and large, two-finger variable-speed trigger. The drill's kit includes two 18V batteries with built-in battery fuel gauges, charger with pass-through plug, side-handle depth gauge, and blow-moulded case. Also available is the 0856-20 V18 SDS compact rotary hammer bare tool for contractors that want to add the rotary hammer to their current V18 lineup.



■ Hilti's TE 2 rotary hammer drills (TE 2 and TE 2-S) are very efficient at drilling anchor holes, and through holes in concrete and masonry, says the company. In addition to full hammering power, the TE 2-S also features a fine-hammering setting for drilling in fragile, brittle materials, like ceramics; the technology reduces impact energy by about 70% when drilling at full speed. The rotary hammers' drilling range is 3/16 in. over 1 in., and the TE 2 weighs just 5.3 lb. To complement the drills, Hilti offers its TE-C3X hammer drill bit line, which incorporates gradient technology. The tools are covered under Hilti Lifetime Service. During the lifetime repair cost limit (which begins after a two-year, no-cost period), the tool will have a maximum repair cost of no greater than 30% of its current list price.

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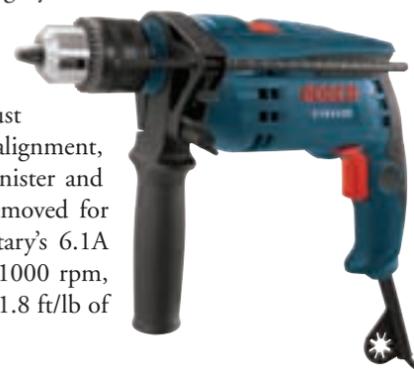
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■ Metabo's SBE610 5.7A hammer drill features a die-cast aluminum gear housing to improve the tool's heat dissipation, rubberized handle and compact construction (it weighs 4.5 lb). The 610W motor delivers a maximum 62,000 ipm and about 3.7 ft-lb of torque. This tool drills through a max. diameter of 1/2 in. of concrete, and sports exhaust routing that sends dust and debris away from both you and the tool's motor (with sufficient space for chuck changes). Each SBE610 comes with a drilling depth-stop gauge, removable side-handle and heavy-duty plastic carrying case. A snap-on hook is an optional accessory.

■ Bosch Power Tools and Accessories has unveiled two new hammer drills. The heart of the 4.2-lb, 1/2-in. 1191VSRK is its 7A Bosch motor, which provides up to 3000 rpm and 48,000 bpm. With this hammer, you can drill your way through concrete up to 5/8-in. thick. The tool packs a two-mode selector (converting from rotation-only to hammer mode), variable speed trigger, convenient forward/reverse switch, 360° auxiliary handle with built-in quick-release depth gauge, and an all-metal, three-jaw chuck. Meantime, the dust-collecting 3/4-in. 11250VSRD weighs 7.4 lb and boasts a two-fan filtering system that captures dust particles. The system has a transparent dust cap for easy bit alignment, while the dust canister and filter are easily removed for clean-up. The rotary's 6.1A motor delivers 0-1000 rpm, 0-4400 bpm and 1.8 ft/lb of impact energy.



■ Makita recently unveiled the compact BHP452HW Li-ion hammer driver-drill, adding to the LXT Series of cordless tools. The Makita-built variable two-speed motor delivers 450 in-lb of torque in a design weighing 3.6 lb, as well as 400 rpm/0-6000 bpm at low speed, and 1500 rpm/0-22,500 bpm at high speed. The tool comes equipped with built-in LED for illuminating the work area, while the battery charger boasts it can recharge a Makita 1.5Ah Li-ion battery in just 15 minutes. The model BHP452HW kit includes two 18V LXT batteries, Rapid Optimum charger, Phillips/slotted drill bit, battery cover and case. 



# Pay for health & safety now, not later

When reviewing a particular trade contractor's financial statements for his first three years, I noticed great profits in Year 1 and 2, then a huge loss in Year 3. The accounts payable were \$500,000 more than the accounts receivable. The contractor had no money in the bank and, with no personal guarantees to suppliers, he abandoned the company.

The record-keeping was poor, to say the least; no one understood the numbers. No one reviewed the financial statements and, in an effort to keep overhead down, they used a poorly trained, part-time bookkeeper. Were they right to look at bookkeeping as a cost, or should they have considered good bookkeeping an investment?

What do you do? Do you invest in your management information systems or do you save the money so you can offer lower prices to your customers? Research shows that 44.4% of businesses fail because of poor record-keeping and/or failure to understand the financials. Had these failed companies invested more time/money into understanding their businesses, more of them likely would have survived.

Throughout the course of doing business we incur lots of discretionary costs, such as the cost of preventive maintenance, yet we see countless examples of businesses and governments' failure to make this investment.

"Capital expenditures to maintain and upgrade BC Hydro's provincial system dropped significantly during the mid- and late-1990s". This quote is taken directly from *The Vancouver Sun* on July 19, 2008, after a three-day black out downtown.

Health and safety (H&S) are best protected by proactive investments in preventive care. However, we see scores of examples to the contrary every day: although legislated to the contrary, we continue to see people not wearing their seatbelts, or even drinking then driving. The lack of fitness and level of obesity are examples of a "voluntary" failure to do what we know is healthy. (And it's simply too easy to pick on smokers.)

I'm sure most people and organizations understand that investing in H&S does, in fact, pay dividends in the long term; our problem is putting this understanding into action. While significant rewards are involved, there's no question that some costs are also involved. So we need to establish our point of view: do we see H&S as a cost that will drain our profits, or do we see it as an investment in our companies and people that will improve our bottom line?

The easiest cost to review is worker compensation premiums. In British Columbia, we are governed by WorkSafeBC. "The safer you are, the less you pay"—that's the whole idea behind WorkSafeBC's experience rating plan. Employers who work safely can earn discounts on their base rate of up to 50% over time. Firms working less safely may face surcharges of up to 100% on their base rate over time. (WorkSafeBC also offers additional premium discounts to contractors who go through certain training programs.)

Check out Table 1 below, and imagine being a steep-slope roofing contractor in maximum demerit competing against a contractor in maximum merit. Doesn't it make sense to invest the money to ensure you don't fall into that trap? (You should check the numbers for your province/territory to get a picture of the costs/savings.)

In Ontario, the Workplace Safety Insurance Board (WSIB) estimates the average lost time for injury/illness costs were \$72,000 per injury in 2003. This number includes direct costs to the WSIB of \$14,000 in benefit payments and an additional cost of \$58,000 to the workplace, which takes into account things like management time spent on injury/illness-related issues, employee replacement costs, injury investigations, staff communication, overtime for other employees, production delays, equipment repair, compliance with Ministry of Labour orders, WSIB audits and possible fines. These costs do not include the cost to our healthcare system.

From April 1, 2004, to March 31, 2008, Ontario achieved a 20% drop in workplace injuries (from 300,000 to 240,000), which translates into employer savings of about \$5 billion in direct and indirect costs during those four years.

## Pay now, or pay later

We are in business to make money. When we spend money on discretionary items, such as H&S, we increase our 'costs'. On the surface, the solution seems simple: don't pay for H&S. However, health and safety is something we cannot avoid: we either address it beforehand or pay for it later when the backlash hits us. You know the expression: Pay now, or pay later.

When you build the H&S cost into your selling price, you recover it; when you don't and an incident catches you by surprise, you cannot recover the cost. When you lose productivity due to an injury, again, there's nothing you can do to get it back. Because you didn't build H&S and injury costs into your estimate, the cost cannot be recovered and you end up taking a loss.

When you implement a health and safety program, on the other hand, you include the prevention cost in your estimates and have fewer surprises on your bottom line. Naturally, you will also put a mark-up on these costs, allowing you to make more profit. 

Ron Coleman, B. Comm., FCCA CMC, is a member of the Institute of Certified Management Consultants of British Columbia. A noted speaker, he has completed many interfirm financial comparisons of groups of construction companies in Canada and the United States. Ron's numerous published education programs include a 36-hour business management course specifically designed for ECABC. He is also author of the book, "Your Million Dollar System: How to Increase the Value of Your Construction Business by One Million Dollars in Three Years". Visit [www.ronaldcoleman.ca](http://www.ronaldcoleman.ca).

Table 1

Premium rates	Standard Max	Max Merit	Max Demerit	Max Spread
Electrical	1.46%	0.73%	2.92%	2.19%
Mechanical	2.51%	1.26%	5.02%	3.76%
Steep-slope roofing	12.98%	6.49%	25.96%	19.47%

## T&B new product alert



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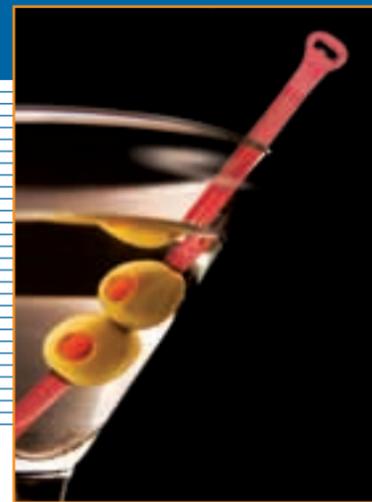
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## T&B monthly tips



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## New Brunswick has new vision for community college network and apprenticeship

The Government of New Brunswick is adding seats and a new Fredericton campus to the province's community college network. Furthermore, Premier Shawn Graham and post-secondary education, training and labour minister, Ed Doherty, announced the community college network will be redesigned so that it will be separate from government and closely aligned to community needs.

The system will consist of an anglophone and francophone college, each with its own president and board. Existing campuses will be retained and grouped regionally as follows:

### Francophone community college

- Northeast: Bathurst, Campbellton, Acadian Peninsula and vicinity
- Northwest: Edmundston, St. Quentin, Kedgwick, Grand Falls and vicinity
- Southeast: Dieppe and vicinity.

### Anglophone community college

Central: Woodstock, Miramichi, Fredericton, the Maritime College of Forest Technology and vicinity

- Southeast: Moncton and vicinity
- Southwest: Saint John, St. Andrews and vicinity

As part of the realignment, the government will invest in a new campus for Fredericton, with the first intake of students expected in 2011-12.

To support the skilled trades, the government will transform the apprenticeship program in 2008-09. Improvements to the program include a coordinated method to match workplaces to apprentices, a new credit system for training and a reduction in the amount of time required to complete training. The new system will also feature increased participation by industry and relevant unions. The apprenticeship program will increase the number of apprentices by 2570 (from 3630 to 6200) by 2012-13, putting more skilled workers into the workforce.

"There are exciting developments in the energy and construction sectors that will be of great benefit to the province's economy," Graham said. "Increasing the participation rates in our apprenticeships and community college network will help us be more competitive as we work to attract, recruit and retain workers in this province."

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## Durham College set to expand



Durham College's Whitby, Ont., campus will be expanding its Skills Training Centre with the help of a \$9-million investment from the Province of Ontario.

"We are so pleased with the provincial government's confidence and investment in our exciting expansion plans," said Don Lovisa, president of the college. "This grant will provide more students than ever before with access to Durham College's exceptional hands-on training and education, helping them fulfil their professional goals upon graduation." Lovisa added the expansion will allow the college to introduce a new cluster of programs focused on the energy industry, "a rapidly growing sector here in Durham Region and Ontario".

The expanded centre will offer new programs in energy conservation and audits, and renewable energy, as well as reinforce existing trades programs, such as electrical. The first phase of the expansion is expected to be completed in 2010, and will add 20,000 sf of space to the facility. With this expansion, Durham hopes to welcome over 1000 more students within five years.

## Manitoba set to expand worker compensation coverage

Nancy Allan, Manitoba's labour and immigration minister and minister responsible for the Workers Compensation Act, says the province has received a report from the Worker's Compensation Board (WCB) supporting the expansion of workers' compensation coverage.

"We believe in moving ahead with expanding coverage in a manner that is balanced and makes sense for employers and workers," said Allan, adding Manitoba has the lowest rate of coverage in Canada, and is committed to extending it. "We accept the recommendation and will review the report to determine the expansion schedule."

The report follows a public review of the Workers Compensation Act, which recommended that coverage of workplaces be extended after consultation with affected industries. 



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# Workplace theft...

## what can *you* do?

By Nigel Heseltine

### Its impact goes far beyond the criminal's gain

**W**orkplace theft generally comes down to either theft of property or time. In recent years, computers have had drawn a lot of attention as enablers of workplace theft. Their omnipresence has encouraged theft of time through inappropriate use of the Internet and e-mail, and made the theft of personal information about employees and clients—not to mention company secrets—much easier.

But companies are victimized in more conventional ways as well through an assortment of large and small crimes, ranging from break-and-enters (B-n-Es) that lead to losses of materials and equipment to the petty theft of office supplies by employees. Add to that fudged travel and expense claims, misleading résumés and unnecessary absences or fraudulent health & safety claims, and it's easy to see why owners might lose sleep over the threats theft poses to a company's bottom line.

Though a major problem in many other businesses, abuse of computers and other electronic devices was a concern to only one of the half-dozen electrical contractors I spoke with. The reason is straightforward: for these small to medium-large businesses, the vast majority of their employees work in the field, either on construction sites or from service vehicles.

Of major concern to them, however, were simple theft, B-n-Es and poor productivity. Dominating their worries at present is material theft—particularly copper—but also aluminum and zinc. This crime, says Ron Bergeron, president of Bergeron Electric, has become much more common than tool theft in the last two years.

While it's possible thieves can be employees, the ECs I spoke with generally agree the perpetrators are usually outside the organization. Dan Mott, president of Mott Electric Ltd. (a Burnaby, B.C., company with 200 unionized electricians), says: "I'm fairly confident that we don't have theft from the perspective of employees... it's outside theft".

Gord Hibbert explains that Digital Electric Inc., the Burlington, Ont., firm he manages, has had problems with people breaking into trucks, forcing the company to install cameras and a programmable alarm system in the yard. John Vickery, owner of Vickery Electric Contracting Ltd. in Whitby, Ont., also suffered a lot of break-ins. He responded by building a secure area for his trucks that paid special attention to illumination, which all but eliminated the problem.

Mott complains that his jobsite losses and the losses of some of his clients (BC Hydro and various institutional buildings) in the Vancouver area are in large part a result of

illegal drug use—desperate addicts looking for a few bucks to finance their next fix. Small amounts of copper and aluminum go missing, "often for very little value, yet [the loss] causes huge disruption to the job," says Mott, adding, "Cut off 10 ft of cable in a 200-ft run and we have to replace the whole run, so a 10-ft piece that's worth, say, five bucks, costs us a thousand." The repair costs far outweigh the criminal's gains.

#### The seduction of soaring metal prices

Soaring metal prices have really changed the landscape. Copper now costs \$4.00/lb, four times what it cost in 2003 and three times its cost in 2005. "Until about two or three years ago, the common thing was getting at the guy's tools," Bergeron says. Now, the inventory of copper wire on his trucks has become a target, forcing him to cut back on what each van carries.

A number of American surveys show jobsite theft is a big problem. A 2008 survey by *Builder* magazine found 90% of respondents were hit, with 50% saying their losses exceeded \$10,000. A DeWALT-commissioned study (October 2004) found that poor jobsite security costs \$1 billion annually in *insured* losses alone. In the same year, a survey by the National Association of Home Builders concluded that jobsite theft added 1-2% to the cost of a new home.



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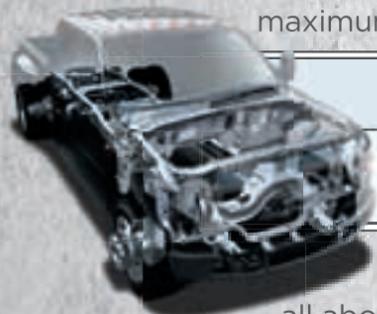
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The perception among criminals that copper is worth stealing has led to some truly risky behaviour. Stealing high-voltage cables—even the grounding wire—has caused the electrocution of more than one would-be thief. A man thought to be trying to steal high-voltage cable was killed in a fenced-in power substation in Pickering, Ont., in January of this year; another was killed in New Brunswick in May 2007, and two have been killed in the past few years while trying to steal cable from substations in British Columbia.

The thefts have also caused power blackouts and created dangers for electricians and others working in the vicinity of the compromised equipment. Vickery explains that even the ground conductor is dangerous, because “today’s current loads are generating harmonic content, [and] those activities are transferred to the ground, meaning the ground has a much more significant role in the electrical circuitry”. He says he has had three calls this year from people who had cut plumbing lines and received shocks because the pipe had become part of the grounding system.

Protection against theft from the outside takes many forms. Many of the sites where Mott Electric works have full-time security guards, and his vehicles are fitted with puck locks. T.J.’s Electric Ltd. in Bedford, N.S., and other small to mid-sized contracting firms allow employees to take vans home at night with the idea that, should a break-in occur, it will affect just one vehicle *and not the fleet*.

Vickery says your best bet is to be less attractive to thieves than the next guy. For example, security lighting and motion sensors can make the site look occupied; removing easily stolen equipment (allowing workers to take it home) and mea-

sures like security bars help would-be thieves conclude they might have more success elsewhere.

Bergeron recommends good padlocks and a good job box, and insists that vans must always be locked with the alarm set—even when the employee is away for only a minute. Another strategy is to try to keep closer tabs on material by asking employees to mark it out when they remove it from a truck and mark what’s left when the job’s complete.

### Employee theft

Bergeron says one reason he doesn’t fear employee theft is that most of his people have been with him for upwards of 20 years. Three-quarters of his employees also participate in a profit-sharing plan, which gives them a stake in the success of the company. They are ‘self-policing’—should they see someone take advantage of the company, they’ll let him know so he can take action. Vickery also believes his core staff are reliable, saying his problems have largely stemmed from “transient” members of his workforce.

Erhard Hermann, owner of Boyd Solar (formerly Erhards Electric) in Didsbury, Alta., believes the best approach to dealing with the problem is to make theft as difficult as possible, because it’s tough to change people’s attitudes. Mott praises the union for helping his company reduce time losses: “It’s not unusual for a union representative to come on the jobsite with me to talk about productivity [and] the importance of it”.

Other ways of decreasing an employee’s incentive to steal from the company include tool and clothing allowances that make it easy for employees to replace lost tools (no questions asked) and a relaxed policy regarding the use of company tools—providing the employee asks first. Most also have a sign Out/In policy for larger tools. Policies such as allowing employees to keep scrap material are frowned upon, although Tim Jones, president of T.J.’s Electric Ltd., shares the proceeds of scrap sales with employees.

Even though employee theft is not much of a concern to the contractors I spoke with, the 2005 “Chubb Private Company Risk Survey” found that 36% of U.S. companies surveyed had experienced employee theft in the past five years, losing—on average—about \$348,000. And while this may not be huge problem for Canadian electrical contractors, it’s not one that should be ignored altogether. Be proactive. If you haven’t already, pay serious consideration to both security details as well as incorporating some of the tips above. **EB**

Nigel Heseltine is a freelance writer based in Scarborough, Ont., and a regular contributor to Electrical Business.

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By Oliver Post

## An effective salesperson is no accident

With summer now in full bloom, it is quite possible that distributors will have some rookies on staff—either helping out during the summer or starting new careers in the electrical distribution sector. In either case, there is a very good chance they have little idea of what it takes to work in the business.

In my experience, one of the most prevalent areas in which the inexperienced fail is sales. While certain job classifications—such as logistics, technical support or producing a bill of materials—clearly require some special skills and training, many young people are under the mistaken impression that success in sales relies solely on personality; the “gift of gab”, so to speak.

While it's certainly important for a salesperson to be comfortable talking to customers (and this applies to inside sales, too, not just the guys on the road), it is simply not enough. Even experienced and successful salespeople can occasionally benefit from a reminder of *why they do well*.

And it boils down to this: a successful salesperson fosters a clear understanding of his customers' needs, has strong belief in how his company is able to meet them, displays effective time management and exhibits dogged follow up.

### Understanding customer needs

Understanding customers' needs is very simple to say but very difficult to consistently achieve. Customers aren't always entirely clear about what they're really looking for, and it's important you don't confuse needs with wants. Sometimes they will state a commitment to nothing but the best, branded quality products out there, but continually gravitate toward the least expensive products in your offering. Other customers may pledge to be only looking for the best value you can offer—with no desire for value-added services—only to be found regularly on the phone or online looking for assistance from experienced staff.

The effective listener will understand what questions to ask and try to combine the resulting answers with any information on the customer's 'real behaviour' to determine what he can offer. And there's nothing wrong with pointing out a

customer's habits:

I know you say that you're able to handle your own jobs, but on the last three jobs you called our guys every day for assistance. This is obviously an important resource for you and I'd like you to consider what we can offer you when you're deciding on who you choose for your next job.

Knowing this can help you fend off price-only competition. It also helps you staff properly, and helps you see your company's place in the marketplace through the eyes of your customer.

### How your company fits in

No company can be all things to all people, and it is important for salespeople to understand the positioning of a company in its marketplace. Perhaps it is the full service operation that prides itself on having extensive inventory. Perhaps it is price competitiveness. Maybe it is that the business is small and friendly, with the owner at the beck and call of customers.

Customers ultimately decide these things for you, but they do it with your help. There is usually a combination of qualities that give your customers an impression of your company. Perhaps it is small and friendly, which is good, but maybe they also think you're not very price competitive, or have a limited selection.

It critical for a salesperson's approach to be consistent with market positioning. Know how to accentuate the positive and address the negative.

### Commit to time management

I do not know a single person who does not bristle at the mere mention of the phrase “time management”. It usually elicits a response of “Time management is not the issue... I just have *too much to do!*”

While this is possibly true, some time management issues are important. One is to have a plan. When you're on the

road, you shouldn't be criss-crossing all over town. You need to organize your appointments as much as possible around your time constraints. And make appointments. Many business owners don't like it when you just drop in on them. (I read an account of one successful salesperson who never makes an appointment for after 4 p.m. He uses that time to set up next week's appointments.)

Know where your business is coming from and spend time there. There's no point in spending one afternoon a week at a customer who does \$500/month with you (with no capacity for any more) just because he's on your way home. Use that time to build your territory.

Dropping off some flyers, catalogues or sales sheets is not a sales call, and there's a very small chance the information will even be reviewed. When you learn of business you didn't know existed, by all means drop in and make an appointment. Then bring those flyers, catalogues or sales sheets with you to the meeting. It's much more effective.

Which brings me to the next point: persistence.

### Make follow-up a way of life

Many salespeople give up on a customer too easily, yet reams of studies have all drilled down to the same conclusion: most customers need to be called half a dozen times, and most salespeople stop at three.

I do not believe that customers buy after half a dozen because they've finally been sold, or it took them that long to hear your message. I believe reality is much simpler: in the time it took a salesperson to make half a dozen calls, something changed with the customer; perhaps he's having a problem with his current supplier, or maybe his business needs have changed and now line up better with your proposition.

Either way, it's not so much a case of being in the right place at the right time as it is of being in that same place over and over again until it becomes the right place at the right time.

If, in that time, you've built up a clear impression that you and your company are there when the customer needs them, you will get the call when the opportunity arrives.

Finding all these qualities strongly represented in a single individual is rare. More often than not, an individual is stronger in some areas than others. Without question, sales is hard, but it can be learned—to the mutual benefit of distributors and their customers. **EB**

Oliver Post can be reached at [oliver.post@hotmail.com](mailto:oliver.post@hotmail.com).

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# Ontario's ESA moves from reactive to proactive

## THE CASE FOR ELECTRICAL PRODUCT SAFETY REGULATION

Electrical product safety in Ontario is regulated under Part VIII of the Electricity Act, 1998, and the requirements set out in the Ontario Electrical Safety Code (OESC). The Ministry of Government Services,<sup>1</sup> which is responsible for Part VIII, delegated the authority to administer and enforce the act and regulations to the Electrical Safety Authority (ESA)—a private, not-for-profit corporation—through the Safety and

Consumer Statutes Administration Act, 1996.

On December 20, 2006, the Ministry of Government Services Consumer Protection and Service Modernization Act, 2006 (Bill 152) received Royal Assent. Bill 152 amended Part VIII of the Electricity Act, 1998, establishing a more transparent legal framework for adopting electrical safety standards and strengthening ESA's regulatory and enforcement powers, which includes regu-



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lation-making authority to create a product safety regulation and mandatory reporting requirements.

On August 1, 2007, the ministry filed Ontario Regulation 438/07 (Product Safety) to improve electrical product safety in Ontario. The new regulation improves ESA's ability to respond to suspected unsafe electrical products, including counterfeits, in the Ontario marketplace by establishing stronger mechanisms to protect consumers and the public.

### ESA moves from reactive to proactive

Prior to this regulation, manufacturers, importers, wholesalers, distributors, retailers and certification/inspection bodies were not required to report any serious accidents, incidents or defects involving electrical products to anyone. During this time, reports of product incidents were rarely submitted to ESA, and the limited number we did receive were submitted on a voluntary basis—mostly by consumers or regulatory bodies—forcing ESA to react to events rather than manage the issues.

Although Ont. Reg. 438/07 is unique in Canada, other jurisdictions—like the United States, Europe and Australia—have had product safety legislation with mandatory reporting requirements in place for many years. The mandatory reporting requirements means ESA will be better able to manage the risks associated with problem electrical products.

The regulation's intent is simple:

- To ensure all those involved in the process of certifying, evaluating or selling electrical products/devices are held accountable for the safety of the products offered for sale (including those already purchased by consumers).
  - To ensure the public is notified of unsafe electrical products/devices.
  - To ensure those selling these products are made to take appropriate corrective action in the event that a product is subsequently found to be unsafe.
  - To assist the creation of a process to retain, preserve or remove electrical products or devices from the marketplace when so ordered by ESA.
- Ont. Reg. 438/07 streamlines the approval and revocation processes for electrical products governed by the OESC that are sold or offered for sale in Ontario, expands mandatory reporting requirements for electrical incidents/accidents to include manufacturers, importers, wholesalers, distributors, retailers and certification/inspection bodies,

The final section of the regulation, the mandatory reporting requirements, came into effect *July 1 (last month)*. As of this date, those subject to the regulation are required to report to ESA accordingly.

and establishes a process for notifying consumers and ordering remedial action when a product is deemed hazardous.

#### Getting into the reg's nitty-gritty

The regulation applies to all electrical products and devices governed by the province's safety code, which includes consumer, commercial and industrial electrical products and wiring devices and products.

ESA has worked with stakeholders over the past several months to establish operational guidelines to support the implementation of the regulation. Specifically, they aim to help affected stakeholders comply with the regulation by clarifying procedures. The final guideline for industry is posted on ESA's website.

The regulation provides a means for ESA to more effectively manage the risks associated with electrical products by giving it tools for detecting, identifying and responding to dangerous or potentially dangerous electrical products at an early stage. The reporting provisions are intended to ensure ESA is apprised of serious electrical incidents, accidents and defects in a timely manner, thereby allowing it to effectively investigate incidents and manage the associated risks.

Incidents, accidents and defects must be reported to ESA whenever:

- a) the severity of actual impact passes the defined threshold for 'death or serious injury' or 'substantial property damage', or
- b) the nature of the incident, accident or defect means it has the potential to cause 'death or serious injury' or 'substantial property damage'.

To assist those who are required to report an incident, ESA has developed, in conjunction with industry stakeholders, a checklist for reporting. The corrective action and notification provisions are intended to reduce the occurrence of serious electrical incidents/accidents by correcting a defect in a product and alerting the public to the risks, and informing them of actions they should follow to protect themselves and others.

The action ESA chooses depends on a number of factors including, but not limited to, the laws of Ontario, assessed level of risk, number of products affected, and seriousness of the potential hazard. The regulation was phased in to ensure ESA and stakeholders had sufficient time to implement the required processes to support the new requirements.

The final section of the regulation, the mandatory reporting requirements, **came into effect July 1** (last month). As of this date, those subject to the regulation are required to report to ESA as soon as practicable after having become aware of any hazards/defects in electrical products covered by the OESC that have caused death, serious injury or substantial property damage or are likely to cause death, injury or damage.

(ESA interprets 'as soon as practicable' as a preliminary report being made within 48 hours followed by another, more detailed report within 10 business days.) All the major industry players listed above—from manufacturer to certification body—are subject to the mandatory reporting requirements.

The safety authority considers a company to have obtained knowledge of a serious incident, accident or defective product when information regarding a reportable incident is received by an employee or official of the company "who may reasonably be expected to be capable of appreciating the significance of that information".

Anyone reporting an electrical incident, accident or defect may do so using the online form

found on ESA's website. In addition to the online reporting form, ESA and its stakeholders created a checklist to assist those reporting determine whether an incident, accident or defect is reportable. The checklist is built into the reporting form on ESA's website.

#### A model for Canada

The Ontario government should be commended for taking the lead on electrical product safety issues. It's important to note that while the Ontario public's electrical watchdog finally has some 'teeth', other jurisdictions in Canada have yet to pass similar legislation.

However, in reaction to the Ontario government's new legislation, a group of regulators and affected industry stakeholders from across the country have begun discussions around a national approach, and how it could be structured. Although

discussions are in preliminary stages, there's hope that what started as a bold step in Ontario will result in a national solution to the effective management of more than just unsafe electrical product issues, thereby providing Canadian consumers with the same level of protection as those in many other countries.

#### Notes

1. Previously known as the Ministry of Government and Consumer Services. The government just recently changed the ministry; now the responsibility for ESA rests with the Ministry of Small Business and Consumer Services. 

Maria Iafano is regulatory affairs analyst with the Electrical Safety Authority (ESA). For more information on the regulation and guidelines, visit ESA online at [www.esasafe.com](http://www.esasafe.com) or call Maria at (905) 712-5379.

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# What do you get when you cross an electrocuted lineman with a manager of health & safety and a plastic surgeon?

By Josephine Lim



Photos courtesy Ross Tilley Burn Centre, Sunnybrook Health Sciences Centre.



In March 2000, Jim Thompson—a Hydro One lineman—had 69,000 volts run through his body while working on a 115kV high-tension line east of Ear Falls, Ont. Witnesses told him his head snapped back and touched his ankles when it happened. Thompson was swung upside down, dangling by his belt; all the while, he couldn't see anything, but felt a sensation of bubbling in his hands and legs. He'd later find out that the current entered through his right hand and exited through 16 holes in his left hand, blowing out both his legs below the knees in the process.

Thompson was taken by helicopter to emergency in Dryden, Ont., where the doctor looked him over, bandaged him up and released him after 24 hours saying, "You're fine". The next day, Thompson found himself back at the hospital with chest pains, and severe spinal and joint pain. To his dismay, the doctors simply prescribed stronger painkillers and sent him on his way.

But he knew something was *really* wrong with him. Thompson constantly felt agonizing pain throughout his whole body and couldn't sleep, but no one could explain it. And worse, his doctors were under the impression the shock he got was harmless, so the Workplace Safety and Insurance Board (WSIB) cut Thompson's benefits and ordered him back to work.

The pain never stopped throughout his ordeal and, for months, Thompson could be found bedridden, hopped up on painkillers. He also suffered memory loss and periods of great confusion; on a really bad day he wouldn't be able to find his way home.

## Finding a cure for ignorance

At the time of Thompson's ordeal, Brian Tink was the manager of health, safety and environment at Hydro One, and he was no stranger to the case: when the incident occurred, Tink had been part of the investigation team that helped deal with the Ministry of Labour. However, Tink didn't know about Thompson's WSIB issues.

In April 2001, Tink attended a union meeting at the Best Western Motor Inn in Dryden—where Thompson lives—to vote on a contract. He arranged to meet with Thompson and chat about his situation, and get a sense of all the symptoms he was still experiencing a year after the incident. Thompson did not disappoint.

"I had started a daily log... to try to help my doctors," says Thompson of that meeting with Tink, "so I just handed the log to him and said, 'Tell me what's wrong'."

Tink left that meeting feeling motivated to find a way to help Thompson, and his first step was to find experts who knew something about electrical injuries. But it was not an easy road. "It drove me crazy!" Tink admits. "I started reading this and that, and came to realize there wasn't a lot of information out there on electrical injury." One thing he did discover, rather quickly, was that "a lot of people didn't understand how serious this could be".

The HS&E manager then heard about something called Telestroke. Launched in 2002, it was a multi-site, emergency-based telemedicine service for supporting emergency physicians in two northern Ontario cities. Under Telestroke, videoconferencing units were provided both in the hospitals and homes of participating University of Toronto neurologists, while PC workstations were used to access computed tomography (CT) images. Tink figured a system like this would be great for electrical injury.

Unfortunately, he didn't really know anyone in the medical community who could help him get the idea off the ground. Then he met Dr. Joel Fish, a plastic surgeon and the medical director of the Ross Tilley Burn Centre of the Sunnybrook Health Sciences Centre. What started as a 15-minute appointment expanded into a three-hour discussion and a written agreement between the two: when Tink had any questions about an injured worker, he would call Fish who would, in turn, contact the hospital where the injured worker was located to learn about the injury and offer assistance.

The idea became procedure. A special contact sheet was placed in every Hydro One vehicle that was to be given to *the attending emergency room doctor* in cases of electrical injury; the number on the sheet would put the attending in touch with an electrical injury expert.



The concept soon came to include other institutions. NORTH Network (now combined with two other provincially funded telemedicine programs to form the Ontario Telemedicine Network) was added to the program. For special care, patients could be transferred to St. John's Rehabilitation Hospital.

Inevitably, the program became available to the whole province (September 20, 2003), and it was getting requests to see patients from all over the place. "There were patients who'd been electrocuted and had problems for weeks, months... sometimes even years had passed," says Fish. "They were still having problems and had nowhere else to turn." He discovered that many of them found out about the electrical telemedicine program on the Internet, or their employer referred them.

Still, not enough people—including doctors—know about the program or the potential severity of electrical injury, which is why Tink wishes *everyone* would call into the Critical system, regardless of how small an injury may appear. "We have cases where someone is discharged the next day but, in a little while, the problems come out," says Tink. "Were the Critical system called right off the bat, the attending doctor would have been put in touch with somebody who could help. We've got to spread the word that electrical injuries are different."

### Upping the ante and aiming for leadership

Unfortunately, the resources to support Sunnybrook's unofficial electrical burn program are stretched thin; they're essentially "borrowed" from the burn and trauma work being conducted by Sunnybrook's burn surgeons. In partnership with Hydro One, Sunnybrook is looking to fill this void with the creation and endowment of the Hydro One Chair in Electrical Injury. It would be the only one of its kind in Canada (and Tink believes it's just a matter of time before the program becomes international).

"We needed an Electrical Injury Program," says Fish. "If you've ever spoken to someone with an electrical injury, they'll tell you they've been from one doctor to another, and undergone test after test. They had nowhere else to go. Now they do, and it's something you cannot let enough people know about."

The Hydro One Chair will act as the program leader for electrical burn care and research, leading not only Sunnybrook, but the country in treating electrical burns and conducting research into the best and new practices for treatment. The financial objective is \$3 million to get the Chair going—and keep it going.

The bottom line is that, without Sunnybrook's Electrical Injury Program (or the fledgling Chair), there really is no centre of expertise in this country for people who have sustained an electrical injury. Healthcare providers work in isolation, usually focusing on the immediate physical symptoms of the injury—completely unaware of the potential physical and non-physical long-term effects that can affect initial care efforts.

Thompson is by no means Canada's first electrical injury victim and, despite more rigorous attention to health and safety matters, he won't be the last. So for the sake of all the Jim Thompsons of Canada—past, present and future—let's answer the call as an united industry. Let's help make Sunnybrook's Hydro One Chair in Electrical Injury, not only a reality, but the world leader in electrical injury research and treatment. **EB**

## Lethal energy

**Potentially causing damaging long-term effects**, electrical injuries are categorized into three types: arc flash burn, and low-/high-voltage injuries. The flash burn is the most common injury, and can cause severe burns that destroy skin and tissue (which may result in amputation).

**Both low- and high-voltage injuries** involve actual electrocution and conduction of electricity through tissue, muscle, bone and nerve. Occasionally you can spot physical evidence of its passage through the body, but there usually isn't much. (In the general medical community, low-voltage is considered anything under 1000 volts.)

**The severity of electrical injury is based on voltage**, current, current type and pathway, resistance and duration of contact. (AC is considered more dangerous than DC because it causes repetitive muscle stimulation that can increase the time of electrical contact.)

**Researchers have begun looking more seriously** into electrical injury, and have discovered that a number of victims suffer from symptoms previously unrecognized or undiagnosed. For example, the less severe cases often hide damage, leading to a high proportion of cases resulting in permanent disability. In addition to burns, amputations, and trauma-related injuries, affected functions can include cognition, mood, behaviour, cardiac performance, orthopaedic status and sleep. **EB**

## Hammond News

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# Infrared measurements take some fine tuning for best results

By Colin Plastow

Temperature is one of the most common parameters to measure and control. Virtually all manufacturing and process operations—from petrochemical to food and beverage—involve temperature measurements that can be anything from environmental surroundings to specific parts, materials or processes.

Infrared (IR) non-contact temperature measurement tools are often an important part of ensuring worker safety—especially when measuring moving, energized or **very hot** parts. They allow measurements of areas that are difficult to access or reach, and are the devices of choice when physical contact with the material, device or part could result in damage, contamination or incorrect temperature readings.

But it's important to note that while IR technology helps us *determine* temperature, it **does not** actually *detect* it; rather, it detects infrared energy, which is emitted by anything above absolute zero (-273.15°C or 0 K). As temperature increases, so does the amount of emitted infrared; by measuring the amount of IR energy, we can determine temperature.

However, taking an accurate temperature measurement involves more than just pointing an IR tool at an object, as the properties of the material being measured—not to mention those of the materials around it—can vary considerably. This will have a direct result on the accuracy of the measurement, creating a number of potential challenges for technicians.

## Emissivity

*Emissivity* is a measure of how well a material emits infrared energy, and it's one of the most common cause of errors when taking IR readings. Non-metals are generally good infrared emitters while most metals are poor. Metals and other poor emitters are, however, good infrared reflectors, which means that when measuring materials such as polished aluminum or copper, technicians

usually end up measuring mostly what is being *reflected* by the material of interest rather than what it is actually emitting.

Where emissivity levels are low, it is important to pay more attention to, and compensate for, reflected errors. For example, a metal that's a 10% efficient infrared emitter is 90% efficient at reflecting it, and while it's possible to correct for reflected temperature errors, it gets increasingly difficult at lower emissivities. As a general rule, an object should have an emissivity of 60% or better to obtain reasonably accurate readings.



When encountering a bad emitter, you can modify its surface to improve results; maybe apply electrical tape (any colour) to the material, or a thin coating of oil or paint. Another possible way to combat the reflector issue is to look for cavities or wells in the surface of the object being measured. Any incident infrared entering a hole or slot will reflect around inside the hole, with a portion being absorbed with each reflection. Little of the infrared that enters the hole or slot will come back out. In other words, the hole is a poor reflector, and poor reflectors make for good emitters. Drill holes, screw heads and/or slots in the material's surface can be used to provide accurate readings.

Another point to consider when working with reflective surfaces is the difference between diffuse and specular reflections. With a *diffuse* reflector, the infrared is reflected in many different directions, but a *specular* reflector will behave just like a mirror with discrete images often clearly visible in the object being examined. An image of someone holding an infrared camera is not an unusual source of error. By taking measurements at different angles to the object of interest, these reflections can often be eliminated or minimized.

## Distance-to-spot ratio

A common mistake happens with the *distance-to-spot ratio*, which is best describes using a flashlight analogy. When you shine a flashlight close to an object, the spot of light is small; as you move away, the spot becomes bigger. The same applies to infrared

thermometers: measurements are generally accurate when the object being measured is reasonably large or close. However, the smaller or further away the object becomes, the more important it is to understand the specifications of the IR tool you're using.

A low-cost IR thermometer may have a 10:1 distance-to-spot ratio, so when you try to measure a 2-in. diameter pipe located 20 ft overhead, your tool will take a reading of a 2-ft diameter area. In this case, the 2-in. pipe will have a small effect on the result. Higher-end units usually have better optics with higher distance-to-spot ratios, allowing you to measure smaller objects at longer distances.

A misconception among some technicians is that the tiny laser dot produced by their IR tool, which appears on the object being measured, represents the actual area being measured. In truth, the laser dot is really just a visual aiming aid (much like the crosshairs in your camera's viewfinder) indicating the centre of the area being measured. Technicians may think they're measuring a 1/8-in. diameter area, but they're measuring far more than that.

## Automatic override

Most modern thermal imagers automatically adjust the Level and Span for what they believe to be the best display of the full range of temperatures in the image. There are cases, however, where it's necessary to override the automatic settings to get a better image of the equipment of interest.

When you want a thermal image of the wheel bearings supporting a large rail container, for example, the automatic settings feature will default to settings appropriate for *everything* in the image. To accurately examine the parts in question, you need to switch to manual operation.

## Infrared thermography for electrical applications

Best practices for infrared thermography vary depending on the application, but some of the key conditions for a successful electrical inspection include the following:

- An electrical load of 40% or greater. More load equals more heat.
- A direct view. Infrared will not pass through enclosure covers.
- High emissivity surfaces.
- Little to no convective cooling, as just a small amount of air movement over the surface will affect the amount of infrared emitted.
- An understanding of ambient conditions. Electrical equipment will warm up with respect to ambient temperatures. When ambient goes up or down, so will observed temperatures.
- Consideration of all variances. Even small variations in results might warrant further investigation.

While thermography is an efficient technology for performing temperature readings in challenging or complex circumstances, users need to be aware of potential sources of error—most of which, thankfully, can be corrected with some simple adjustment techniques and best practices. With a solid understanding of the potential problem areas—along with appropriate training—you can ensure your temperature readings are as accurate as they can be. **EB**

Colin Plastow, industrial product manager, has been with Fluke Electronics Canada since 1987 in various support and product management positions. He lends his expertise in electronic test and measurement both through a variety of seminars and educational articles, like this one. E-mail Colin at colin.plastow@fluke.com.

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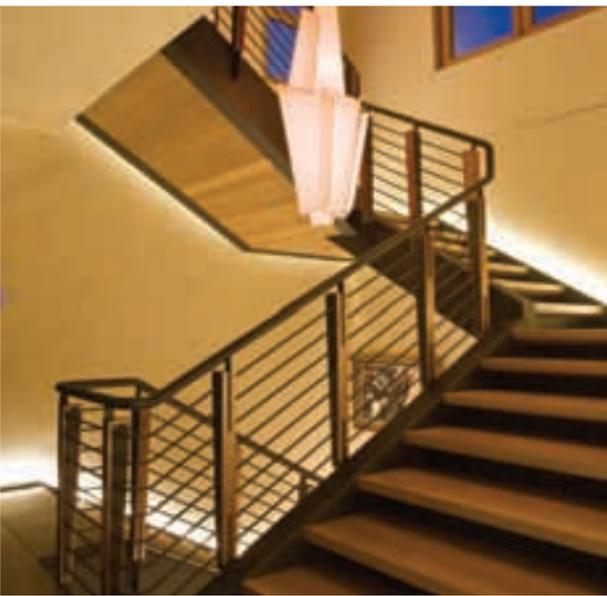


# Largest Lightfair Las Vegas to-date

By Anthony Capkun

Lightfair in Las Vegas crushed the record books with a 19% increase in attendance over the last event held in Las Vegas (the show alternates between Las Vegas and New York), drawing over 19,800 registered attendees. Lightfair is North America's largest annual architectural and commercial lighting trade show and conference, attracting lighting designers and engineers to distributors, electrical contractors and Electrical Business.

Last issue we presented some of our picks from among all the new products introduced at the show. This time we wanted to draw particular attention to awards ceremonies that take place during Lightfair: the GE Edison Awards and Cooper Lighting's Source Awards. Both awards recognize projects from around the world that push the lighting envelope (using a substantial amount of their respective products, of course).



"Another contemporary lighting detail is shown in this view," say the lighting designers of the Crystal Lake residence. "The stairs seem to float off the wall with the help of a linear LED light source mounted to the side of the steel structure." The main stairs are brought together with custom decorative chandeliers, hanging at different heights, while downlights in the ceiling and landings below provide 'fill' light.

## Edison Awards

EB was invited to the awards gala where the ultimate champion was announced from among three Award of Excellence



The Tampere Power Plant's new lighting scheme transforms the facility into an attractive feature of the city and waterfront nightscape, creating a positive and dynamic message for the site and all who see it.

winners. (Last year's Edison Award winner was a Canadian job, the Gardiner Museum of Ceramic Art in Toronto, Ont. Unfortunately, the Canucks were shut out this year.) Winning top prize was the U.S. Air Force Memorial in Arlington, Va.

However, we were more taken with one of the other finalists: the Tampere Power Plant in Finland. And because it's a power plant, you can imagine just how boring this thing must look. And you'd be right: the industrial architecture features geometric forms and lines without any decorative details (i.e. it's a big ugly box). But the new lighting transforms this facility into an attractive feature of the city and waterfront nightscape. The programmable lighting system varies the appearance of the building to create a positive and dynamic message for the site, the building's architecture, the owner and the millions of people who pass the site each year during the long northern nights. Well done!

## Source awards

Cooper Lighting announced the winners of the 31st Source Awards national lighting design competition, recognizing them at Lightfair at the Keynote Speaker luncheon. In all, six Professional awards and seven Student awards were handed out. Unlike the Edison Awards, which pick just one overall winner, the Source awards hand out two top Professional



With regard to this shot of the custom house, Randy Sebedra says, "Within the entry, the barrel vault ledge is lined with 60° optics to create a soft and uniform wash of light. The architectural form and dimension is accentuated by highlights and shadows." Photo Tom La Barbera, Picture This Studios.

awards: one for Commercial, and the other for Residential.

Taking top honors in the Professional Commercial category, then, was the relighting of the Alexander Hamilton U.S. Custom House in New York (which you might recall reading about in EB October 2007, only with Osram Sylvania as the lighting supplier), while top honours in Residential went to the Crystal Lake residence located in Aspen, Colo. (Again, sadly, no Canadian jobs.)

## New York bound in 09

Lightfair will be celebrating its 20th anniversary next year when it returns to New York, May 3-7, and EB will be there to discover the latest and greatest in lighting. **EB**



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# Management is on the hook: don't let it off!

The June/July edition of Electrical Business featured a news item about the conviction of Transpave under the Bill C-45 amendments to the Criminal Code of Canada. The company was fined only \$100,000 (plus a \$10,000 victim surcharge) because it proved it was largely unaware of the circumstances leading up to the accident (and had subsequently spent over \$750,000 on health and safety measures).

A few days after that story was published, I visited the facility of a manufacturer of similar product. I initially met with the plant safety manager regarding conducting an arc flash assessment and training his staff. He put me on to the general manager, who then set up a meeting with a senior electrician. The meetings were excellent and, as an initial step, they gave me a tour of the facility, where I met a second electrician who had been lobbying for these actions.

A quick check of the transformer supplying the plant revealed that workers were probably exposed to a Hazard Risk Category (HRC) 3 in the main electrical rooms. The daily clothing was cotton coveralls and the reflective vests they wore were 100% polyester. In addition, there was no mandate that only cotton street clothes were to be worn under the coveralls.

For those unaware of arc flash HRC categories, HRC 3 is a grave danger, and the electrical staff at this facility was seriously unprotected. Any person exposed to an arc flash wearing cotton coveralls is likely to have his clothes ignite and, when wearing the polyester vest, guaranteed to be acutely burned.

At the conclusion of the tour, plans were made to begin the arc flash study and for the electricians to participate in a training course the following week. All that was required now was the final stamp of approval from the COO, as the electricians and various managers were all on board. Two days later I learned the COO had decided "they were too busy right now" and "they would look at it again this fall".

Were a serious or fatal accident happen to one of these workers while the COO keeps everything on hold, the company and its managers would be in dire straits. They would have few of the defences the Transpave management had in that:

- they are aware of the dangers facing their electrical staff;
- they are in a province with regulations dictating the use of flame-resistant clothing; and,
- by deferring action due to "busy"-ness, management is realizing a benefit.

Senior managers are universally disparaged by workers as "bean counters" when it seems they've made a decision that seems to be favouring beans over bodies. However, were we to meet this particular COO, we would probably find a person not impervious to human suffering. He probably contributes to many charities and is responsible for many good deeds. Managers at this level make many complex daily decisions, but there's a difference with this one: he was not qualified to make it.

The standard driving changes in our electrical work practices is NFPA 70E. Article 110.6(D)(1)(4) states that a qualified worker be trained in: "the decision-making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely".

Were the COO qualified, he would have immediately ensured his electrical workers were outfitted in F/R coveralls and arc flash PPE, and scheduled them for training. He would have banned the use of the polyester vests, mandated all underclothing to be cotton or natural fibre, embarked upon an arc flash hazard study and purchased the PPE required for the hazards identified.

NFPA 70E will soon be



superseded by CSA Z462 in Canada;

the requirements will essentially be the same, yet still only stated as "requiring workers to be qualified". Clearly, those counting the beans also need to be qualified, or be required to defer such decisions to those who are. Due to the COO's lack of qualification, he made a decision that continues to expose his workers to grave danger.

We now have laws enabling courts to put managers and executives in prison. A necessary next step are laws requiring qualification of managers and executives to ensure they are trained in "The decision-making process necessary to determine the degree and extent of the hazard and the [PPE] and job planning necessary to perform the task safely". **EB**

Dave Smith is president of Canada Training Group and has been providing consulting services to industry since 1980. You'll find stories like this one at [www.canada-training-group.ca](http://www.canada-training-group.ca); feel free to use this information to support your own safety program. Dave can be reached at [davesmith@canada-training-group.ca](mailto:davesmith@canada-training-group.ca).



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to an electronic low-voltage (ELV) reverse phase control dimmer. Also, the system offers easy-to-use mounting tracks and fewer system components for quick onsite assembly. The low-voltage, Class II power supply is integrated into each fixture to enable runs of up to 200 ft per 120V power input.

**GE Consumer & Industrial**  
[www.ge.com](http://www.ge.com)

**Sealed luminaire for healthcare**

Cooper's new SGI Series promises to meet the demands of today's healthcare market by providing a completely sealed luminaire with architectural styling. Designed to meet IP standards, the shallow, enclosed housing and sealed door protect against infiltration of airborne bacteria. Available in 2 x 2-ft and 2 x 4-ft configurations, the perforated centre basket provides soft, indirect illumination, enhancing the look of any healthcare environment.



**Cooper Lighting**  
[www.cooperlighting.com](http://www.cooperlighting.com)

**Pulse-start system**



Standard's Pulsetek pulse-start system offers up to 100% longer lamp life and improved lumen maintenance over traditional metal halide (MH) lamps, says the company, translating into both lower replacement and lifetime operating costs. The system also provides more light while using less energy (up to 50% improvement in system lumens/

watt) compared to traditional MH technology, Standard boasts. The lamps are available in wattages ranging from 50 to 875.

**Standard Products**  
[www.standardpro.com](http://www.standardpro.com)

**Efficient electronic HID ballasts**



American Ballast introduced a line of high-efficiency electronic high-intensity discharge (HID) ballasts offering significant energy savings versus standard magnetics, says the company. The ballast operates quietly at a high frequency, and features auto-restart and shutdown functions, 65-90 colour rendering index, and protection against opens, shorts, igniter failure and surges. The minimum lamp starting temperature is -30°C and the ballast is potted for cooler operation and longer ballast life. The ballasts are suitable for a range of indoor and outdoor applications, such as supermarkets, industrial sites, parking lots and distribution centres. American offers a three-year warranty on its electronic HID ballast product family, whose members are all cUL listed.

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**EB PRODUCTS**



**'Triple Play' wall plate**

Hubbell's netSelect 'Triple Play' wall plate combines data/phone/voice connectivity within a stylish unit, says Hubbell. The wall plate supports gigabit networks by incorporating a Cat 5e universally wired jack for A or B wired network flexibility, with a discreet C5e moulded-in icon. The plate also features a six-position USOC RJ-25 jack with telephone moulded-in icon. The RJ-25 format protects sensitive equipment by preventing inadvertent insertion of computer network cables. For CATV and satellite applications, the plate is equipped with an F-Type connector, nickel-plated to better match light-coloured walls.

**Hubbell Wiring Systems**  
[www.hubbell.com](http://www.hubbell.com)

**Spring-type, rail-mounted terminal blocks**

The newest additions to WAGO's 285 Series (Power Cage Clamp)—the 150 (2/0) and 135 (2 AWG) terminals—round out the company's line of spring-type, rail-mounted terminal blocks from AWG 22-4/0. All Power Cage Clamp members feature a side-entry design for increased reliability when connecting large



conductors in space-restricted areas, such as switchgear cabinets. Termination is simple: one twist of a hex wrench (2/0 or 4/0) or screwdriver (2 AWG) activates the spring and clamp. Next, push the locking tab, freeing both hands for conductor manipulation. A simple rotation releases the latch, clamping the conductor in place. To complement the design, an available comb-style jumper provides safe potential commoning. No tools are needed as the jumper snaps into place, saving wiring time.

**WAGO Corp.**  
[www.wago.com](http://www.wago.com)

### True-RMS digital multimeter

Fluke's 113 True-RMS digital multimeter (DMM) promises to help you quickly diagnose and repair most electrical problems.



Employing the Fluke Vchek LoZ, low impedance measurement function, you can simultaneously test for voltage or continuity while the Min/Max function records signal fluctuations. This new DMM includes added measurement functions and a larger display for easier visibility in low-lit areas; it performs diode tests and provides both auto and manual ranging capabilities. Convenience features include an integral holster with probe holders for easy storage, and an optional magnetic hanger, which allows you to suspend the tool from steel surfaces for hands-free convenience.

**Fluke Electronics Canada**  
[www.flukecanada.ca](http://www.flukecanada.ca)

### Tower harness

Dentec introduced the Elk River line, which boasts the Eagle Tower harness for workers who spend a long time "at height". It features significant padding in the shoulders as well as a 5-in. padded back support. The harness also benefits workers with a substantial saddle and 6 D rings; the straps are made of a polyester/nylon blend, and the harness comes with a removable tool-belt and carry-all bag.

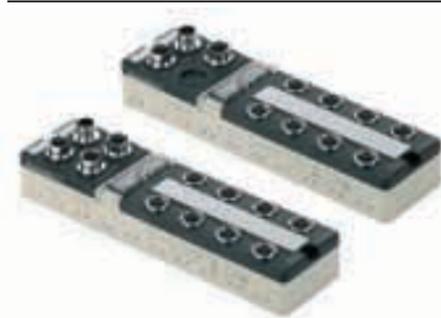
**Dentec Safety Specialists Inc.**  
[www.dentecsafety.com](http://www.dentecsafety.com)

### Clamp meters with IR thermometer

Extech has launched the EX600 Series (EX612, EX613, EX622, EX623) clamp meters featuring an IR thermometer for locating hot spots plus NCV (non-contact voltage). Made of a rugged double-moulded housing, these meters feature dual thermocouple inputs for T1, T2 and T1-T2 differential temperature measurement. The clamp meters provide True-RMS measurements and boast a built-in NCV detector with LED alert and Data Hold plus Peak Hold of current surges during start-up. For high resolution over wider ranges, the EX600 series provides 40,000-count clamp meter functions for DC voltage, resistance, capacitance and frequency.

**Extech Instruments**  
[www.extech.com](http://www.extech.com)

### New Ethernet switches



Weidmuller's new line of IP67-rated industrial Ethernet switches are designed to deploy switching technology directly onto machines, process or factory floor, particularly in harsh production environments. The robust housing has a flammability rating of UL 94 V0 with industry standard M12 sealed connection ports, allowing for increased flexibility. The line includes both unmanaged and managed versions. The managed version supports VLAN, QoS, port trunking and mirroring, SNMP and DHCP, is auto cross-healing connections via Weidmuller's RapidRing technology. The switches feature eight 10/100 Ethernet ports along with dual power contacts and a serial interface port for set-up and diagnostics.

**Weidmuller**  
[www.weidmuller.ca](http://www.weidmuller.ca)

### Platinum-clad wire

Anomet offers platinum-clad wire that's functionally equivalent to solid platinum in



providing high corrosion resistance and electrochemical and thermal stability, but is less costly. Featuring 2% or more cladding thickness, this wire has a smooth, consistent surface finish and can be custom engineered to match application requirements. Metallurgically bonded to core materials such as nickel-iron, molybdenum, titanium, stainless steel and copper, this platinum-clad wire ranges in sizes from 0.002 in. to 0.125 in. o.d., and as ribbon up to 1-in. wide (depending on desired properties). Other precious metals such as palladium, gold and silver are available.

**Anomet Products Inc.**  
[www.anometproducts.com](http://www.anometproducts.com)

### Probe adapter set



AEMC introduced its 600V probe adapter set Probix Model HX0071 as an accessory to the 10/1 Probe Model PRHX1 (part of the company's line of hand-held oscilloscopes). Made for industrial applications where larger clips are

required to clip onto the measurement point, this adapter has a grabber assembly that attaches to the probe tip, common lead wire that accepts industry-standard alligator clips with a 4-mm banana jack, alligator clip and a pencil-point adaptor that also attaches to the probe tip. Features include: 1000V, Cat III; 600V Cat IV; jaw opening of 0.75 in.; safety ridge to help prevent your hand from slipping; and a common 23.5 in. lead.

**AEMC Instruments**  
[www.technical-sys.com](http://www.technical-sys.com)

### Cable tester

Honeywell offers a new cable tester that allows you to quickly verify the performance of HDMI cables and DVI cable assemblies. Compact and easy-to-use, the plug-in tester sends controlled signals through all 19 conductors within the HDMI interface. Its nine LEDs illuminate one-by-one as each of the HDMI cable's nine discrete functions are confirmed. Should any LED fail to light, you know the cable is defective and must be replaced. This tester assures you—while you're onsite—that an HDMI cable's circuits and connections are operational, thereby reducing callbacks and customer dissatisfaction.

**Honeywell**  
[www.honeywellcable.com](http://www.honeywellcable.com)

### Multi-clasp padlock



Castell's multi-clasp padlock for lockout/tagout (LOTO) procedures features a standard fixed-width hasp shape and a highly-vis-

ible, safety-colour coded, polyester powder-coated finish. The multi-clasp has room for six individual padlocks to be attached, allowing multiple workers to lock off the same machine. The lock will not open until each separate padlock has been removed, thereby ensuring the locked-off equipment cannot be reactivated until everyone has completed their work and safe operation can resume.

**Castell Iso-Lok**  
[www.castell.com](http://www.castell.com)

### Hand-held vibration spectrum analyzer

Datastick's VSA-1225 vibration spectrum analyzer is its first product on the Windows Mobile/Pocket PC platform. The PDA-based analyzer/data collector includes the new Version 1.8 of the Datastick Spectrum software suite, which records and shows vibration FFT spectra in acceleration, velocity and displacement displays (and now in a new vibration decibel display).

The VSA-1225 hardware module attaches firmly to an HP iPAQ hx2400-series or hx2700-series hand-held. The iPAQ supplies the computing power and 128 MB of data storage, while the VSA hardware module supplies the sensor power, electronics and interface.

**Datastick Systems Inc.**  
[www.datastick.com](http://www.datastick.com)



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- Motor Installations and High Voltage
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**NETcomm Maritimes 2008 Conference**  
*Network & Cabling magazine*  
**September 3-4**  
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 Visit [www.networkcablingmag.ca](http://www.networkcablingmag.ca)



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**September 23-24**, Quebec City, Que.  
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 Visit [www.exiderdome.ca](http://www.exiderdome.ca)



**Fall Classic**  
*Manitoba Electrical League (MEL)*  
**September 3**  
 Winnipeg, Man.  
 Visit [www.meleague.net](http://www.meleague.net)

**Networking Luncheon (Featured speaker: Don Lowry, president & CEO, EPCOR)**  
*Ontario Energy Network (OEN)*  
**September 4**  
 Toronto, Ont.  
 Visit [www.ontarioenergynetwork.org](http://www.ontarioenergynetwork.org)

For a more extensive listing, visit **EBMag.com** and click **Calendar**

**Industry Conference**  
*Electrical Contractors Association of Ontario (ECAO)*  
**September 6-13**  
 Costa del Sol, Spain  
 Visit [www.ecao.org](http://www.ecao.org)

**Bob Carson Classic**  
*Electrical Contractors Association of Alberta (ECAA)*  
**September 10**  
 Edmonton, Alta.  
 Visit [www.ecaa.ab.ca](http://www.ecaa.ab.ca)

**Energy Efficiency Training**  
*Energy Efficiency Contractors' Network (EECN)*  
**September 11**  
 Ottawa, Ont.  
 Visit [www.eecn.ca](http://www.eecn.ca)

**NELA on the Road (GE's Lighting and Electrical Institute)**  
*GE Consumer & Industrial*  
**September 16**, Montreal (End Users Only, bilingual)  
**September 17**, Montreal (Distributors Only, bilingual)  
**October 7**, Halifax  
**October 21**, Quebec City  
 Visit [www.nelaontheroad.com](http://www.nelaontheroad.com)



**ENEX08 (Energy Excellence 2008)**  
*Excellence in Manufacturing Consortium, and Energy Management, Green Business and PEM magazines*  
**September 23-24**  
 Mississauga, Ont.  
 Visit [www.energyexcellence.ca](http://www.energyexcellence.ca)



**Electrix Learning Expo**  
*British Columbia Electrical Association (BCEA)*  
**October 1**  
 Vancouver, B.C.  
 Visit [www.bcea.bc.ca](http://www.bcea.bc.ca)



**The NECA Show**  
*National Electrical Contractors Association (NECA)*  
**October 4-7**  
 Chicago, Ill.  
 Visit [www.necaconvention.org/2008](http://www.necaconvention.org/2008)



**2009 CE Code - CSA Z462 Conference Series**  
*Canadian Standards Association (CSA)*  
**October 21-22**, Edmonton, Alta.  
**October 27-28**, Vancouver, B.C.  
 E-mail [seminars@csa.ca](mailto:seminars@csa.ca)

**The Power Show (Electric Expo)**  
*Independent Electrical Contractors (IEC)*  
**October 29-November 1**  
 Atlanta, Ga.,  
 Visit [www.ieci.org](http://www.ieci.org)



**Construct Calgary and Home Builder & Renovator Expo**  
**November 4-5**  
 Calgary, Alta.  
 Visit [www.constructcalgary.com](http://www.constructcalgary.com)

**Electrical Safety Technical and Mega Projects Workshop**  
*IEEE Industry Applications Society (Southern Alberta and Northern Canada Sections)*  
**November 19-21**  
 Edmonton, Alta.  
 Visit [www.ieee.org/estmp](http://www.ieee.org/estmp)

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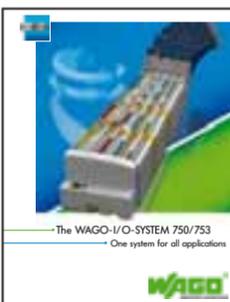
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**Accessories catalogue for test tool add-ons**

Fluke has released a 40-page catalogue showcasing accessories that, it says, vastly expands the functionality and value of its test tools. For example, you'll find accessories that turn a digital multimeter into a thermometer, amp meter or even a pressure gauge. Meantime, tool cases protect tools while holsters and magnetic hangers keep instruments handy. Non-contact detectors, probe and hat lights and appropriately rated test probes help you improve safety and proficiency.

The catalogue is available free from Fluke distributors. Tool owners can order a printed copy or read the catalogue online at [www.fluke.com/accy-catalog](http://www.fluke.com/accy-catalog).



**Brochure highlights expanded WAGO-I/O-System**

WAGO Corp. has issued a new WAGO-I/O-System brochure—which includes a removable, four-panel reference poster—outlining its range of bus couplers, PLCs and more than 300 digital input/output, analogue input/output and specialty modules. The document includes key 750/753 Series features and lists available software tools, such as WAGO-I/O-Check (commissioning) and WAGO-I/O-Pro (programming), as well as WAGO-I/O-System applications—industrial automation, process engineering, facility management and onshore/offshore marine uses (with applicable worldwide certifications and approvals).

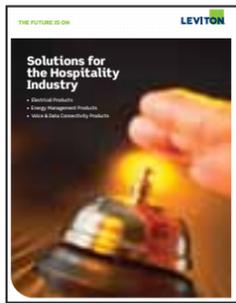
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**Cable pull tension estimator**

Greenlee's PF8 Pull Force Estimator helps you quickly estimate the pulling force required for cable pulling jobs in advance. To use PF8, you supply a number of facts about an upcoming cable pull, including: length; cable weight/foot; jacket type; conduit/duct size and type; and pulling direction (horizontal/up/down). Once inputted, PF8 provides an estimate of the required force. It consists of a calculator that can be downloaded to your PC or Mac for easy access (MS Excel is required).

For more information on the PF8, call (800) 435-0786 or visit [www.greenlee.com](http://www.greenlee.com).



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A new brochure from Leviton illustrates how temporary-stay facility owner/operators can elevate their guests' experience and make their facilities safer, while reducing maintenance and energy costs. Installing state-of-the-art wiring and faster data connection devices—coupled with energy-saving lighting controls—can create a safer, more enjoyable experience for guests while improving bottom-line performance. The four-colour, six-page brochure offers a handy selection guide for electrical devices on a room and application basis (i.e. guest rooms, hallways, etc.).

Contact your local Leviton sales rep for a printed copy, or download a PDF from Leviton's online library at [www.leviton.com.com](http://www.leviton.com.com)



**Customized enclosure solutions catalogue**

Rittal's 1350-page Handbook 32 provides detailed product ordering and specification information to allow you to build customized enclosure solutions with standard, off-the-shelf parts. Within, you'll not only find the usuals like AE wallmount, TS modular freestanding, Top Therm Plus air-conditioners, busbar power distribution systems and IT data centre solutions, but also new content, such as hygienic stainless steel enclosures for food/beverage applications.

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**TRA-SER Premier offer for CECA members**

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It's been three years! Mark your calendars now for BCEA Electrix Learning Expo being held at the Pacific Coliseum on Wednesday, October 1, 2008. Attendee registration will open the last week of August. Check out the seminar line up. You won't want to miss it!

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Stephen Hinde, Provincial Electrical Safety Manager - BC Safety Authority

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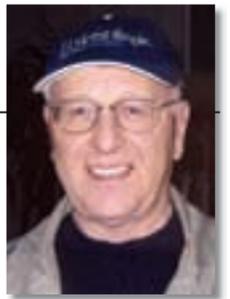
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# A look at hazardous locations

The CE Code defines a hazardous location as one in which there's a risk of fire or explosion. To minimize risk, the code specifically identifies the electrical installation requirements for locations where undesirable materials are present in sufficient quantities to create a fire or explosion. It further breaks down these hazardous locations across three classes (Rule 18-004):

- Class I for flammable gases/vapours,
- Class II for combustible or combustible electrically conductive dusts, and
- Class III for ignitable fibers or flyings.

Hazardous locations must be protected from electrical sources of ignition (electrical arcing by equipment, such as a contactor or a switch, is one source of ignition). Heat-producing electrical equipment, such as lighting, transformers or heaters, are other possible ignition sources.

## The fire triangle... and then some

We're all familiar with the fire triangle; that is, it takes three components to initiate a fire or explosion: source of ignition, fuel and oxygen. Take away any one of these and nothing happens. But vapour-producing liquids and gases possess some other properties that can influence whether a fire/explosion occurs. For example:

- The *flash point* of a liquid is the minimum temperature at which the liquid gives off sufficient vapour to form an ignitable mixture with air. (Gasoline, for example, has a flash point of -43.3°C.)
- *Minimum ignition temperature* is the temperature at

which a vapour/gas will ignite, and CE Code Appendix B provides a table containing this information for many gases/vapours. Obviously, the surface temperatures of electrical equipment must be lower so as to avoid a fire/explosion.

- *Rate of evaporation* is the rate at which a hazardous vapour is produced from a liquid. When you remove vapours faster than they can be produced, you reduce or altogether eliminate the fire/explosion risk.
- *Vapour density* of a gas/vapour is the ratio of its weight to air. For example, the vapour density of hydrogen is 0.1, meaning it is 1/10 the weight of air, while the vapour density of gasoline fumes is 3.4. (So, were there a gas leak, would you expect to find hydrogen at ceiling or floor level? What about gasoline fumes?)
- *Flammable (explosive) limits* are the upper and lower limits of the mixture with air that will support combustion. A mixture of gas/vapour and air below the lower explosive limit (LEL) is too 'lean' to ignite, while a mixture above the upper explosive limit (UEL) is too 'rich'.

Hazardous locations are also classified by the degree of risk as determined by the types of products present. Class I gases/vapours are further classified into Zones based on the fire/explosion hazards present:

**Zone 0** - An explosive gas atmosphere (gases, vapours or mists) is present continuously or for long periods, like the air space above a solvent in an enclosed storage tank. The

code prohibits power-consuming devices, such as a motor or lighting equipment, within a Zone. Only intrinsically safe, extremely low energy, circuits are permitted.

**Zone 1** - Where an explosive gas atmosphere is likely during normal operation, or the location is next to a Zone 0 area.

**Zone 2** - Where an explosive gas atmosphere is unlikely, or may exist for only a short time, or the location is next to a Zone 1 area and affected by positive pressure ventilation.

Many industries manufacture, process or use flammable or explosive products, and while a great deal of effort is taken to reduce risk, process failures, incorrect installations, inadequate maintenance or incorrect operation procedures can result in a hazardous situation. It behooves us to understand these locations, including Classes and Zones, and approach our work appropriately.

Les Stoch, P.Eng., is president of L. Stoch & Associates, specialists in quality management/engineering services. He is a member of PEO, OEL and IAEL, and develops and delivers electrical code and technical workshops for Dalhousie University. He also developed the Master Electrician training program and exam (Ontario) for the Electrical Contractor Registration Agency. Visit L. Stoch & Associates online at [www.lstoch.com](http://www.lstoch.com).



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Questions and answers compiled by the Electrical Safety Authority



## Tackle the Code Conundrum... if you dare

So, you think you know the electrical code, eh? Well, we'll soon find out if you're an electrical code junkie or downright code-clueless. Take a look at the following questions and check your answers in September's Electrical Business.

### How did you do?

- 3 of 3** — Not only are you smart, you love to show off.
- 2 of 3** — You're pretty smart, but you still missed one.
- 1 of 3** — Your understanding of these questions is not up to code.
- 0 of 3** — Did you come up with your answers by playing Eenie, Meenie, Minnie, Moe?

### Question 1

Monorail, tram rail or crane runway tracks shall be permitted to be used as a main contact conductor (or as a supply circuit conductor) for one phase of a 3-phase alternating-current circuit when the rail serving as a conductor is \_\_\_\_.

- a) effectively insulated from ground
- b) effectively bonded to ground
- c) made of non-conductive material
- d) made of copper

### Question 2

The voltage rating of photovoltaic source circuits shall be the rated open-circuit voltage of the photovoltaic power source multiplied by what percentage?

- a) 80%
- b) 100%
- c) 110%
- d) 125%

### Question 3

GTO sleeving refers to a flexible polymeric sleeve intended to enclose luminous tube sign GTO cable operating at not more than 7500 volts-to-ground, and intended to be used as an approved raceway.

- a) True
- b) False

### Answers to Code Conundrum

Electrical Business June/July 2008

**Q-1:** A permanent, legible warning notice carrying the wording "Danger – High Voltage" or "Danger – V" shall be placed in a conspicuous position on all cable trays containing high-voltage conductors with the maximum spacing of warning notices not exceeding \_\_\_\_ metres.

- c) 10 m.** Rule 36-006(1).

**Q-2:** Where conductive optical fiber cables are exposed to lightning or accidental contact with electrical light or power conductors, the metal members of the conductive optical fiber cable shall be \_\_\_\_:

- d) Grounded in the building as close as possible to the point of cable entry.** Rule 56-214.

**Q-3:** Insulated bonding conductors are counted when determining the minimum size of outlet box required for a particular installation.

- a) True.** Rule 12-3034(1) says that boxes shall be of sufficient size to provide usable space for all insulated conductors contained in the box, "subject to the following..."; insulated bonding conductors are not exempted by any of the exceptions contained in the rule.

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